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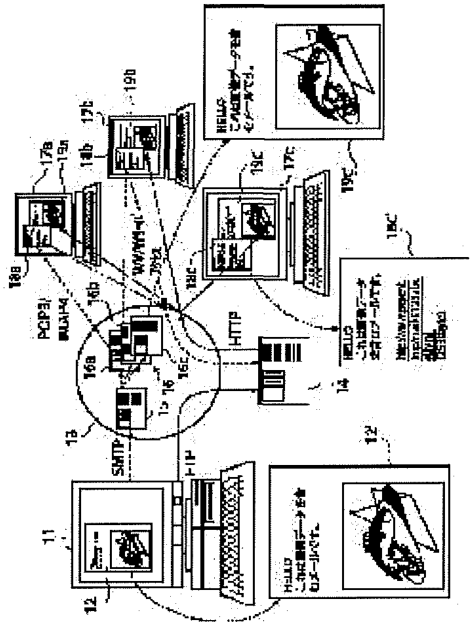
(54) COMPOSITE MAIL TRANSMISSION SYSTEM, ITS COMPOSITE MAIL TRANSMITTING METHOD, AND RECORDING MEDIUM

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a composite mail transmission system, its composite mail transmitting method, and a recording medium which make it possible to transmit and receive various composite mail irrelevantly to the environment of the reception side.
SOLUTION: Electronic mail is separated into a text mail of a small size and a composite mail of a large size; and only the text mail of the small size is transmitted to the receiver and the composite mail of the large size is transmitted to a WWW server 14 and stored. The receiver receives the composite mail by accessing the WWW server 14 only when receiving the composite mail according to the contents of the sent text mail.



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original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1]A receiving set and the 1st transport unit that transmits the 1st data division transmitted from said sending set to said receiving set characterized by comprising the following, A compound mail transmission system comprising the 2nd transport unit that transmits the 2nd data division accumulated in said data accumulation means according to an access request which has a data accumulation means to accumulate the 2nd data division transmitted from said sending set, and is outputted from said receiving set to said receiving set.

A sending set which has the separating mechanism which divides complex data into the 1st data division and the 2nd data division, and transmits said 1st data division and said 2nd data.

The 1st reception means that receives and displays said 1st data division.

An access request means to output an access request of said 2nd data division based on access information included in said 1st data division.

The 2nd displaying means that receives and displays said 2nd data division.

[Claim 2]The compound mail transmission system according to claim 1, wherein said 1st data division consists of text data and said 2nd data division contains non-text data.

[Claim 3]The compound mail transmission system according to claim 1 having a discriminating means which distinguishes whether said receiving set receives said 2nd data division from said 2nd means of communication based on access information included in said 1st data division.

[Claim 4]The compound mail transport unit according to claim 1, wherein said 2nd transport unit is built in as a server in said sending set.

[Claim 5]The compound mail transmission system according to claim 1, wherein said complex data is compound statement document data.

[Claim 6]The compound mail transmission system according to claim 1, wherein said complex data includes at least one independent file.

[Claim 7]The compound mail transmission system according to claim 1, wherein said complex data contains at least one compression and a conversion file.

[Claim 8]The compound mail transmission system according to claim 1, wherein said complex data includes an archive.

[Claim 9]The compound mail transmission system according to claim 1, wherein said 1st means of communication is an E-mail means of communication.

[Claim 10]The compound mail transmission system according to claim 1, wherein as for said compound mail transmission system two or more preparations and said sending set are constituted in said 1st transport unit so that the 1st same data division may be transmitted to each of two or more of said 1st transport units.

[Claim 11]The compound mail transmission system according to claim 1, wherein said compound mail transmission system comprises two or more preparations and a receiving set of 1 in said receiving set to other receiving sets so that transmission of said 1st data division is possible.

[Claim 12]The compound mail transmission system according to claim 1, wherein said sending set is constituted so that it may transmit using a communications protocol according to said 1st transport unit or said 2nd transport unit when transmitting said complex data.

[Claim 13]The compound mail transmission system according to claim 1, wherein said 2nd transport unit is a WWW server.

[Claim 14]The compound mail transmission system according to claim 1, wherein said 2nd transport unit is a FTP server.

[Claim 15]The compound mail transmission system according to claim 1, wherein said sending set is constituted so that address information of a field where said 2nd data division in said data accumulation means is accumulated in said 1st data division may be added.

[Claim 16]The compound mail transmission system according to claim 1, wherein said sending set is constituted so that size information of said 2nd data division may be added to said 1st data division.

[Claim 17]The compound mail transmission system according to claim 1, wherein said sending set is constituted so that said 2nd data division may be changed into HTML form and it may transmit.

[Claim 18]Said sending set is provided with a capacity discriminating means which distinguishes whether it has sufficient storage capacity for said 2nd transport unit to accumulate said 2nd data division transmitted, The compound mail transmission system according to claim 1 constituting so that transmission of said 1st data division and the 2nd data division may be stopped, when it did not have sufficient storage capacity by said capacity discriminating means and is distinguished.

[Claim 19]The compound mail transmission system according to claim 1, wherein said sending set is constituted so that said 2nd data division may be transmitted to said 2nd transport unit with a protocol of a file transfer.

[Claim 20]The compound mail transmission system according to claim 1, wherein said 2nd transport unit transmits said 2nd data division to said receiving set with an HTTP protocol.

[Claim 21]The compound mail transmission system according to claim 1, wherein said 2nd transport unit is constituted so that said 2nd data division may be transmitted to said receiving set with a protocol of a file transfer.

[Claim 22]The compound mail transmission system according to claim 1, wherein said

sending set is constituted to said 2nd data division so that at least one processing of a data format conversion process, data compression processing, and archive-ized processing may be performed.
[Claim 23]According to a kind of data of said 2nd data division, said sending set so that at least one processing of a data format conversion process, data compression processing, and archive-ized processing may be performed, Or the compound mail transmission system according to claim 1 having a control means which controls the sending set concerned so that neither said data format conversion process nor data compression processing nor archive-ized processing may be performed.
[Claim 24]The compound mail transmission system according to claim 1 including a file characterized by comprising the following.
A file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed.
The 2nd data division before said data format conversion process or data compression processing is performed.

[Claim 25]The compound mail transmission system according to claim 24 including a file characterized by comprising the following.
A file which consists of the 2nd data division to which said data format conversion process or data compression processing was performed when said sending set has unknown machine environment of said receiving set.
The 2nd data division before said data format conversion process or data compression processing is performed.

[Claim 26]The compound mail transmission system according to claim 1, wherein said sending set is provided with a machine environment memory measure which memorizes information about machine environment of said receiving set.
[Claim 27]Said sending set receives said 2nd data division based on information about machine environment memorized by said machine environment memory measure, The compound mail transmission system according to claim 26 constituting so that at least one processing of a data format conversion process, data compression processing, and archive-ized processing may be performed.
[Claim 28]Said compound mail transmission system including two or more receiving sets said sending set, Inside of 2nd at least one data division that consists of forms corresponding to a kind of said receiving set when performing simultaneous transmissive communication to said two or more receiving sets, The compound mail transmission system according to claim 1 constituting so that the 2nd data division that consists of the form concerned may not be transmitted, when the 2nd same data division is already transmitted to said 2nd transport unit.
[Claim 29]Said compound mail transmission system including two or more receiving sets

said sending set, The compound mail transmission system according to claim 1 constituting so that the 1st data division corresponding to a kind of two or more of said receiving sets may be transmitted to said two or more receiving sets, respectively when performing simultaneous transmissive communication to said two or more receiving sets.

[Claim 30]When performing said simultaneous transmissive communication, said sending set to said 1st data division. The compound mail transmission system according to claim 29 constituting so that address information of a field where the 2nd data division that consists of form corresponding to a kind of said receiving set in said data accumulation means is accumulated may be added.

[Claim 31]The compound mail transmission system according to claim 29, wherein said sending set is constituted so that kind-of-data information on the 2nd data division that turns into said 1st data division from form corresponding to a kind of said receiving set in said data accumulation means may be added, when performing said simultaneous transmissive communication.

[Claim 32]The compound mail transmission system according to claim 29, wherein said sending set is constituted so that size information of the 2nd data division that turns into said 2nd data division from form corresponding to a kind of said receiving set in said data accumulation means may be added, when performing said simultaneous transmissive communication.

[Claim 33]A receiving set and the 1st transport unit that transmits said at least one data division transmitted from said sending set to said receiving set characterized by comprising the following, It has a data accumulation means to accumulate data divisions other than at least one data division transmitted to said 1st transport unit, A compound mail transmission system containing the 2nd transport unit that transmits a data division accumulated in said data accumulation means according to an access request outputted from said receiving set to said receiving set.

A sending set which has the separating mechanism which divides complex data into two or more data divisions, and transmits said two or more data divisions.

A reception means which receives at least one data division among said two or more data divisions.

Two or more displaying means which display said at least one received data division.

An access request means to output an access request of data divisions other than said at least one received data division based on access information included in a data division displayed on said two or more displaying means.

[Claim 34]A compound mail method of communication of a compound mail transmission system which has a receiving set which receives a sending set characterized by comprising the following which transmits complex data, and said complex data.

A step which divides complex data into the 1st data division and the 2nd data division.

A step which transmits said 1st separated data division.

A step which transmits to a data accumulation means and accumulates said 2nd separated data division.
A step which receives and displays said 1st transmitted data division in said receiving set,
A step which outputs an access request of said 2nd data division from said receiving set to said data accumulation means based on access information included in said 1st data division, A step which receives said 2nd data division sent out from said data accumulation means according to said access request in said receiving set.

[Claim 35]The compound mail method of communication according to claim 34, wherein a step which receives said 2nd data division is a step which displays said 2nd data division on said receiving set.
[Claim 36]The compound mail method of communication according to claim 34, wherein a step which receives said 2nd data division is a step which memorizes said 2nd data division to said receiving set.
[Claim 37]The compound mail method of communication according to claim 34, wherein said 1st data division consists of text data and said 2nd data division contains a non-text data part.
[Claim 38]The compound mail method of communication according to claim 34 having a step which distinguishes whether said 2nd data division is read from said data accumulation means based on access information included in said 1st data division following a step which receives and displays said 1st data division.
[Claim 39]The compound mail method of communication according to claim 38 interrupting complex data reception when said 2nd data division was not read and it distinguishes in a step which distinguishes whether said 2nd data division is read.
[Claim 40]The compound mail method of communication according to claim 34, wherein said data accumulation means is built in said sending set.
[Claim 41]The compound mail method of communication according to claim 34, wherein said complex data is compound statement document data.
[Claim 42]The compound mail method of communication according to claim 34, wherein said complex data includes at least one independent file.
[Claim 43]The compound mail method of communication according to claim 34, wherein said complex data contains at least one compression and a conversion file.
[Claim 44]The compound mail method of communication according to claim 34, wherein said compound mail includes an archive.
[Claim 45]The compound mail method of communication according to claim 34, wherein at least one side of a step which transmits a step which transmits said 1st data division, and said 2nd data division is an E-mail means of communication.
[Claim 46]In a step which said compound mail transmission system has the 1st means of communication that transmits the 1st data division transmitted by said sending set to said reception means, and transmits said 1st data division, The compound mail method of

communication according to claim 34 transmitting the 1st same data division to two or more 1st means of communication.

[Claim 47]The compound mail method of communication according to claim 34 having a step which said compound mail transmission system is provided with two or more receiving sets, and transmits said 1st data division to other receiving sets from a receiving set of 1.

[Claim 48]The compound mail method of communication according to claim 34 containing a step which chooses a communications protocol which transmits said 1st data division or said 2nd data division.

[Claim 49]The compound mail method of communication according to claim 34, wherein said data accumulation means is a WWW server.

[Claim 50]The compound mail method of communication according to claim 34, wherein said data accumulation means is a FTP server.

[Claim 51]The compound mail method of communication according to claim 34, wherein a step which transmits said 1st data division contains a step which adds address information of said data accumulation means by which said 2nd data division is accumulated in said 1st data division.

[Claim 52]The compound mail method of communication according to claim 34, wherein a step which transmits said 1st data division contains a step which adds size information of said 2nd data division to said 1st data division.

[Claim 53]The compound mail method of communication according to claim 34, wherein a step which transmits to said data accumulation means and accumulates said 2nd data division contains a step which changes said 2nd data division into HTML form.

[Claim 54]The compound mail method of communication according to claim 34, wherein a step which transmits to said data accumulation means and accumulates said 2nd data division contains a step which distinguishes whether said data accumulation means has sufficient storage capacity to accumulate said 2nd data division.

[Claim 55]The compound mail method of communication according to claim 34 transmitting said 2nd data division with a protocol of a file transfer in a step which transmits to said data accumulation means and accumulates said 2nd data division.

[Claim 56]The compound mail method of communication according to claim 34, wherein said 2nd data division is transmitted to said receiving set with an HTTP protocol in a step which receives the 2nd data division sent out from said data accumulation means in a receiving set.

[Claim 57]The compound mail method of communication according to claim 34, wherein said 2nd data division is transmitted to said receiving set with a protocol of a file transfer in a step which receives the 2nd data division sent out from said data accumulation means in a receiving set.

[Claim 58]The compound mail method of communication according to claim 34, wherein a step which transmits said 2nd data division contains a step which performs at least one processing of a data format conversion process, data compression processing, and

archive-ized processing to said 2nd data division.
[Claim 59]To a step which transmits said 1st data division, according to a kind of data of said 2nd data division, . [whether at least one processing of a data format conversion process, data compression processing, and archive-ized processing is performed, and said 2nd data division is transmitted, and] Or the compound mail method of communication according to claim 34 containing a step which distinguishes whether said 2nd data division is transmitted without performing both said data format conversion process data compression processing and archive-ized processing.
[Claim 60]The compound mail method of communication according to claim 34 transmitting a file characterized by comprising the following to said accumulation means.
A file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed.
The 2nd data division before said data format conversion process or data compression processing is performed.

[Claim 61]The compound mail method of communication according to claim 34 transmitting a file characterized by comprising the following to said accumulation means.
A file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed when machine environment of said receiving set is unknown.
The 2nd data division before said data format conversion process or data compression processing is performed.

[Claim 62]The compound mail method of communication according to claim 34 by which it is memorizing [said sending set]-beforehand-information about machine environment of said receiving set characterized.
[Claim 63]In a step which transmits to said data accumulation means and accumulates said 2nd data division, The compound mail method of communication according to claim 62 characterized by performing at least one processing of a data format conversion process, data compression processing, and archive-ized processing to said 2nd data division based on information about said machine environment.
[Claim 64]In a step which transmits to said data accumulation means and accumulates said 2nd data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, The compound mail method of communication according to claim 34 not transmitting the 2nd data division that consists of the form concerned when the 2nd same data division is already transmitted to said data accumulation means among 2nd at least one data division that consists of forms corresponding to a kind of said receiving set.
[Claim 65]The compound mail method of communication according to claim 34 transmitting the 1st data division corresponding to each of two or more of said receiving sets to said two

or more receiving sets in a step which transmits said 1st data division, respectively when performing simultaneous transmissive communication to two or more receiving sets from said sending set.

[Claim 66]In a step which transmits said 1st data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, The compound mail method of communication according to claim 65 adding and carrying out address information of a field where 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means is accumulated in said 1st data division.

[Claim 67]In a step which transmits said 1st data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, The compound mail method of communication according to claim 65 adding kind-of-data information on 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means to said 1st data division, and transmitting to said two or more receiving sets, respectively.

[Claim 68]In a step which transmits said 1st data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, The compound mail method of communication according to claim 65 adding size information of 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means to said 1st data division, and transmitting to said two or more receiving sets, respectively.

[Claim 69]A compound mail method of communication of a compound mail transmission system which has a receiving set which receives a sending set characterized by comprising the following which transmits complex data, and said complex data.

A step which divides complex data into two or more data divisions.

The 1st transmission step that transmits at least one data division through at least one transmission route among said two or more separated data divisions.

At least one 1st transfer step which transmits at least one data division contained in said two or more data divisions transmitted from said sending set to said receiving set.

A displaying step which displays a data division transmitted in said 1st transmission step on said receiving set, A data accumulation step which transmits to a data accumulation means and accumulates at least one data division other than said transmitted data division, A step which outputs an access request to a data division accumulated in said data accumulation means in said data accumulation step based on access information included in a data division displayed in said displaying step, At least one 2nd transfer step which transmits a data division accumulated in said data accumulation means according to said outputted access request to said receiving set.

[Claim 70]A process of dividing complex data into a computer at the 1st data division and the 2nd data division, A process of transmitting said 1st separated data division, and a process of transmitting to a data accumulation means and accumulating said 2nd separated data division, A process of receiving and displaying said 1st transmitted data division in said receiving set, A process of outputting an access request of said 2nd data division from said receiving set to said data accumulation means based on access information included in said 1st data division, A recording medium recording a program for performing a process of receiving said 2nd data division sent out from said data accumulation means according to said access request in said receiving set by said computer in form which can be read.

[Claim 71]The recording medium according to claim 70, wherein a process of receiving said 2nd data division is a process of displaying said 2nd data division on said receiving set.

[Claim 72]The recording medium according to claim 70, wherein a process of receiving said 2nd data division is a process of memorizing said 2nd data division to said receiving set.

[Claim 73]The recording medium according to claim 70, wherein said 1st data division consists of text data and said 2nd data division contains a non-text data part.

[Claim 74]The recording medium according to claim 70 having the process of distinguishing whether said program reading said 2nd data division from said data accumulation means based on access information included in said 1st data division following a process of receiving and displaying said 1st data division.

[Claim 75]The recording medium according to claim 70 interrupting complex data reception when said 2nd data division was not read and it distinguishes in a process of distinguishing whether said 2nd data division being read.

[Claim 76]The recording medium according to claim 70, wherein said data accumulation means is built in said sending set.

[Claim 77]The recording medium according to claim 70, wherein said complex data is compound statement document data.

[Claim 78]The recording medium according to claim 70, wherein said complex data includes at least one independent file.

[Claim 79]The recording medium according to claim 70, wherein said complex data contains at least one compression and a conversion file.

[Claim 80]The recording medium according to claim 70, wherein said compound mail includes an archive.

[Claim 81]The recording medium according to claim 70, wherein at least one side of a process which transmits a process of transmitting said 1st data division, and said 2nd data division transmits said 1st data division or said 2nd data division by an E-mail means of communication.

[Claim 82]The recording medium according to claim 70 transmitting the 1st same data division to two or more 1st means of communication that transmits said 1st data division transmitted to said reception means in a process of transmitting said 1st data division.

[Claim 83]The recording medium according to claim 70, wherein said program includes a process of transmitting said 1st data division to other receiving sets from a receiving set of

1.

[Claim 84]The recording medium according to claim 70, wherein said program includes a process of choosing a communications protocol which transmits said 1st data division or said 2nd data division.

[Claim 85]The recording medium according to claim 70, wherein said data accumulation means is a WWW server.

[Claim 86]The recording medium according to claim 70, wherein said data accumulation means is a FTP server.

[Claim 87]The recording medium according to claim 70, wherein a process of transmitting said 1st data division includes a process of adding address information of said data accumulation means by which said 2nd data division is accumulated in said 1st data division.

[Claim 88]The recording medium according to claim 70, wherein a process of transmitting said 1st data division includes a process of adding size information of said 2nd data division to said 1st data division.

[Claim 89]The recording medium according to claim 70, wherein a process of transmitting to said data accumulation means and accumulating said 2nd data division includes a process of changing said 2nd data division into HTML form.

[Claim 90]The recording medium according to claim 70, wherein a process of transmitting to said data accumulation means and accumulating said 2nd data division includes a process of distinguishing whether said data accumulation means having sufficient storage capacity to accumulate said 2nd data division.

[Claim 91]The recording medium according to claim 70 transmitting said 2nd data division with a protocol of a file transfer in a process of transmitting to said data accumulation means and accumulating said 2nd data division.

[Claim 92]The recording medium according to claim 70, wherein said 2nd data division is transmitted to said receiving set with an HTTP protocol in a process of receiving the 2nd data division sent out from said data accumulation means in a receiving set.

[Claim 93]The recording medium according to claim 70, wherein said 2nd data division is transmitted to said receiving set with a protocol of a file transfer in a process of receiving the 2nd data division sent out from said data accumulation means in a receiving set.

[Claim 94]The recording medium according to claim 70, wherein a process of receiving the 2nd data division sent out from said data accumulation means in a receiving set includes a process of performing at least one processing of a data format conversion process, data compression processing, and archive-ized processing, to said 2nd data division.

[Claim 95]According to a kind of data of said 2nd data division, a process of transmitting said 1st data division, . [whether at least one processing of a data format conversion process, data compression processing, and archive-ized processing is performed, and said 2nd data division is transmitted, and] Or the recording medium according to claim 70 including a process of distinguishing whether said 2nd data division being transmitted

without performing both said data format conversion process data compression processing and archive-ized processing.
[Claim 96]The recording medium according to claim 70 transmitting a file characterized by comprising the following to said accumulation means.
A file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed.
The 2nd data division before said data format conversion process or data compression processing is performed.

[Claim 97]The recording medium according to claim 70 transmitting a file characterized by comprising the following to said accumulation means.
A file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed when machine environment of said receiving set is unknown.
The 2nd data division before said data format conversion process or data compression processing is performed.

[Claim 98]The recording medium according to claim 70 by which it is memorizing [said sending set]-beforehand-information about machine environment of said receiving set characterized.
[Claim 99]In a process of transmitting to said data accumulation means and accumulating said 2nd data division, The recording medium according to claim 98 characterized by performing at least one processing of a data format conversion process, data compression processing, and archive-ized processing to said 2nd data division based on information about said machine environment.
[Claim 100]In a step which transmits to said data accumulation means and accumulates said 2nd data division when said program performs simultaneous transmissive communication to two or more receiving sets from said sending set, The recording medium according to claim 70 not transmitting the 2nd data division that consists of the form concerned when the 2nd same data division is already transmitted to said data accumulation means among 2nd at least one data division that consists of forms corresponding to a kind of said receiving set.
[Claim 101]In a process of transmitting said 1st data division when said program performs simultaneous transmissive communication to two or more receiving sets from said sending set, The recording medium according to claim 70 transmitting the 1st data division corresponding to each of two or more of said receiving sets to said two or more receiving sets, respectively.
[Claim 102]In a process of transmitting said 1st data division when said program performs simultaneous transmissive communication to two or more receiving sets from said sending set, The recording medium according to claim 101 adding and carrying out address

information of a field where 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means is accumulated in said 1st data division.
[Claim 103]In a process of transmitting said 1st data division when said program performs simultaneous transmissive communication to two or more receiving sets from said sending set, The recording medium according to claim 101 adding kind-of-data information on 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means to said 1st data division, and transmitting to said two or more receiving sets, respectively.
[Claim 104]In a process of transmitting said 1st data division when said program performs simultaneous transmissive communication to two or more receiving sets from said sending set, The recording medium according to claim 101 adding size information of 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means to said 1st data division, and transmitting to said two or more receiving sets, respectively.
[Claim 105]A process of dividing complex data into a computer at two or more data divisions, and the 1st transmission process that transmits at least one data division through at least one transmission route among said two or more separated data divisions, At least one 1st transfer process of transmitting at least one data division contained in said two or more data divisions transmitted from said sending set to said receiving set, A display process of displaying a data division transmitted in said 1st transmission process on said receiving set, A data accumulation process of transmitting to a data accumulation means and accumulating at least one data division other than said transmitted data division, A process of outputting an access request to a data division accumulated in said data accumulation means in said data accumulation process based on access information included in a data division displayed in said displaying step, A recording medium recording a program for performing at least one 2nd transfer process of receiving a data division sent out to said data accumulation means according to said outputted access request in said receiving set by said computer in form which can be read.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to a compound mail transmission system which transmits the compound mail containing text data and non-text data, a compound mail method of communication for the same, and a recording medium.

[0002]

[Description of the Prior Art]Conventionally, the exchange of the E-mail on a network is presented with various kinds of transport units by practical use.

[0003]The KUROZUDO E-mail environment of the conventional E-mail environment where it is used within a specific user group which is represented by for example, trade name CC:MAIL in a company is in use, and unique Smale of the Internet was used among some researchers etc.

[0004]By the development and the spread of the Internet in recent years, the opened use of an Internet mail for many and unspecified users increasing quickly However, a ball, Practical use is presented with the transport unit and software of the various E-mails on a personal computer (henceforth "PC") etc. besides traditional unique Smale. On the other hand, the demand of liking to transmit and receive not only the mail that consists only of the conventional text data also in use of an E-mail but compound mail with rapid development and spread of various multimedia is increasing.

[0005]Here, the E-mail with which "compound mail" contains non-text data, such as binary files, such as a compound statement document including image data, the ornamentation data of a character, and those allotment information, or a picture and an audio program, is said.

[0006]From the first, since it came as an object of transmission and reception of text data (European languages), mounting of the mail server etc. which relay development and the E-mail of the protocol of various E-mails or electronic mail software were considered by the subject in the text data, and the E-mail has been performed.

[0007]Although recent years come and the standard for dealing with non-text data on an E-mail, etc. have been improved in standards RFC2045-9:MIME (Multiple InternetMail Extensions) etc., The grade of mounting of these standards with the e-mail software and the mail server which are used now was various. Since the mail server especially passed in the Internet and electronic mail software (and grade of those mounting) of a receiver were not able to be specified, the size of the electronic mail data which can be transmitted and received, a kind, etc. were not able to be known beforehand.

[0008]Drawing 12 is a mimetic diagram showing the flow of the E-mail at the time of transmitting compound mail on the Internet with the conventional transport unit and electronic mail software of an E-mail.

[0009]In the figure, the sending person of an E-mail uses the electronic mail software 1102, text "Hello -- this is the mail containing image data -- " -- from -- the compound mail containing the non-text data which consists of becoming text data and an image data file is transmitted from transmitting side PC1101.
[0010]The compound mail transmitted from transmitting side PC1101, It communicates by standard electronic mail protocol SMTP (Simple Mail Transfer Protocol) etc. to the transmitting side mail server 1104 in the Internet 1103, It reaches to the receiver mail server 1105 specified as a mail address via the mail server 1104 on the Internet 1103. An e-mail addressee, A receiver mail server the compound mail which reached to 1105. Standard electronic mail protocol IMAP4 (Internet.) specified by standard electronic protocol POP3 (Post Office Protocol Version 3) or standards RFC2060 specified by standards RFC193 According to Message Access Protocol Version 4 etc., it reads by the receiver e-mail software 1107 which operates on receiver PC1106.
[0011]In drawing 12, numerals 1102' and numerals 1107', It is an enlarged drawing of the display screen by the receiver electronic mail software 1107 currently displayed on the enlarged drawing of the display screen by the transmitting side electronic mail software 1102 currently displayed on the display screen of transmitting side PC1101, respectively, and the display screen of receiver PC1106.
[0012]
[Problem(s) to be Solved by the Invention]However, there was a problem shown below in transmission of the compound mail using a conventional transport unit or software of the E-mail which was mentioned above.
[0013](1) There are some which have restricted the mail size which can transmit in the E-mail transport unit or software of the restriction former of mail size which can transmit. Therefore, there was a case where the compound mail which has the size beyond the limit value of a mail server could not be transmitted and received.
[0014]Generally as compared with text data, non-text data, such as a picture, with large size. (For example, the size of the graphics file of the 24-bit color of 640x480 dots will be 921600 bytes) In addition to things, data volume increases mail data further by the ene coating treatment which seven-bit-code-izes non-text data (although it depends on an encoding method). As for the size of compound mail, since it increases abbreviated 33% at the lowest, it is common to become very bigger size than simple text data.
[0015]As shown in drawing 12, an E-mail is transmitted via the transmitting side mail server 1104, the receiver mail server 1105, and the mail server in the Internet 1103 in the meantime, but mounting of the mail function in these mail servers is dramatically various. The server with the smallest upper limit of this mail size had become a bottleneck of e-mail transfer in e-mail channels of communication. When mail of the size more than the upper limit on mounting of a mail server was received, the system failure of not only the cut of the data of the portion beyond the limit value of un-arriving of an E-mail or an E-mail but the mail server may have been caused. Since the server which an E-mail especially passes

intrinsically on the Internet could not be specified, the size of the mail to transmit needed to be restricted to below constant value.

[0016]As a means to avoid restriction of the upper limit of this mail size, by two or more copies, for example in "standards RFC2046:MIME" A media kind (Multipart Media Type) etc., It is decided upon the standard which divides e-mail into plurality in recent years, and practical use is presented with the e-mail software which has a division transmission function of an E-mail based on these standards. However, even if the transmitting side electronic mail software 1102 has a division transmission function, When it does not have a recombination function of the divided E-mail in the receiver electronic mail software 1107, the recombination of division mail will be difficult and e mail transmission of large size can be performed as a matter of fact. Although the example of drawing 12 shows the E-mail transmission and reception on the Internet 1103, For example, in the personal computer communications etc. which adopt a concentration host method, Even if it is a case where one user divides compound mail, when the place in which restriction is provided on agreement is also in the total size of the whole mail and there is such restriction, even if it divides even if and makes size per 1 mail small, There was a case where restriction could not be received with the total size before division, and transmitting mail of the size more than the limitation size could not be carried out.

[0017](2) When the non-guaranteeing addressee of reception and a display of the compound mail by a receiver looks at compound mail, the addressee can see only the data of the form which can be displayed with the receiver electronic mail software 1107. However, practical use is presented with various e-mail software in the E-mail against many and unspecified persons, especially the E-mail on the Internet. Therefore, at the general transmitting side, mailing environment of a receiver cannot be judged and it cannot be judged of what kind of form data can be displayed.

[0018]These functions are expressed by the protocol peculiar to the electronic mail software, although a part of electronic mail software transmitted and received the compound statement document including image data, the ornamentation data of a character, and those assignment information by e-mail and it has the function etc. which display appropriately. Therefore, it was restricted that such a function generally becomes effective when the electronic mail software of the transmitting side and a receiver was the same.

[0019]At the receiver, since the compound mail transmitted with different electronic mail software from a receiver may not be able to perform even suitable reception, not to mention a display, communication of compound mail of it was completed only in the very limited range.

[0020](3) As a realistic method of transmitting data other than a text with the complexity of compound mail data handling, and the electronic mail software of the difficulty former, As an attached file which the non-text data file was prescribed by standards RFC 2045-9, and also was based on the purpose Internet mail extension (MIME:Multipurpose Internet

MailExtensions) ene coating etc. There is a technique attached to an E-mail and this technique is supported by much electronic mail software.

[0021]However, the uuencode form which is an encoding method which is widely used by unique Smale etc. before MIME besides the MIME standard, and has many dialects, Generally two or more encoding methods, such as a BinHex method used between Macintosh of an apple company, etc. in many cases, are used, and it is different with electronic mail software which encoding method is supported. Therefore, in order to exchange an E-mail certainly, it was required for the both sides of a sending person and an addressee to know which encoding method the knowledge of an encoding method and both electronic mail software are supporting.

[0022]The handling of an attached file was different for every kind of file, or OS currently used, and the handling was dramatically difficult for the beginner of a computer. For example, even if an image data file can receive as an attached file, the addressee needs to reproduce the original image data file from the attached file by which encoding is given for seeing the picture. Although it is necessary to start the viewer software according to the form of the image data file, tens of kinds of forms are one of the forms of an image data file, and the form which can be supported changes standardly with OS, application software, etc.

[0023]Although standards MIME has the regulation which attached-file-izes non-text data, there is no regulation of the notation in the receiver of the sent mail, and the mail received only by the attached file cannot realize a compound statement document. Attached file-ization does not avoid restriction of transmitting mail size, either.

[0024](4) The problem receiver electronic mail software 1107 at the time of reception of the E-mail of large size the timing which receives e-mail from the receiver mail server 1105, When e-mail reception is generally directed by the user at the time of receiver e-mail software wear starting, When the receiver electronic mail software 1107 accesses the mail server 1105 with a prescribed interval and arrival of new mail is checked, it is a case where the notice of new mail arrival is received from a mail server etc. Thus, by the function and setting out of receiver electronic mail software, the timing which receives is different.

[0025]Much electronic mail software will receive the new mail in a mail server altogether unconditionally at the time of e-mail reception. However, generally, as mentioned above, since compound mail was [data size] large, even if it was a case so that it may receive normally even if and can display, it had the problem that the time which reception takes became long. When especially modem connection, a dialup connection, etc. had slow line speed, there was a case where it took impractical time. Reception mail pressed the disk storage capacity of the receiver, and when a disk was filled up when the worst, and a receiving system stopped, it was.

[0026]It is difficult for a user to continue reception over a long time in mobile environment in a piece place generally. In many cases, telex rate gold of a cellular phone, a public telephone, etc. which are usable circuits is because a large sum and the transmission speed are low speeds. Although various memory storage, such as a hard disk of small capacity, is used from the restriction of RAM, a flash memory, a size, or weight by which the battery back-up was carried out by apparatus, mobile computing devices, Just as it connects with a mail host and begins reception of e-mail only in order to for example only check the reception mail addressed to itself since any storage capacity was small, prolonged receiving operation will be started, Especially in the case of a public telephone, a coin and a telephone card may be lost, and a telephone call may break off on the way, and also big-ticket phonecall charges will start. As the received data volume mentioned above, when the storage capacity of mobile computing devices with small received-data capacity was exceeded, there was a problem of mobile computing devices hangging-up.

[0027](5) In the simultaneous transmissive communication which transmits the same contents to the partner of pressure plurality of the network traffic by the simultaneous transmissive communication of large size mail, Network traffic will be made to increase rapidly even if it is mere text mail, since mail of the same contents is transmitted [only the number of partners] continuously. Furthermore, in the case of the simultaneous transmissive communication of compound mail of large size, there was a case where often applied great load to network traffic, and problems, such as delay of E-mail attainment, un-arriving of an E-mail, and a network down by extension, were caused.

[0028]This invention was made in order to solve the above-mentioned problem, and an object of this invention is to provide a compound mail transmission system which enables transmission and reception of various compound mails, a compound mail method of communication for the same, and a recording medium irrespective of the environment of a receiver.

[0029]

[Means for Solving the Problem]To achieve the above objects, a complex data transmission system of claim 1, A sending set which has the separating mechanism which divides complex data into the 1st data division and the 2nd data division, and transmits said 1st data division and said 2nd data, The 1st reception means that receives and displays said 1st data division, and an access request means to output an access request of said 2nd data division based on access information included in said 1st data division, A receiving set which has the 2nd displaying means that receives and displays said 2nd data division, The 1st transport unit that transmits the 1st data division transmitted from said sending set to said receiving set, It has a data accumulation means to accumulate the 2nd data division transmitted from said sending set, and comprises the 2nd transport unit that transmits the 2nd data division accumulated in said data accumulation means according to an access request outputted from said receiving set to said receiving set.

[0030]As for a complex data transmission system of claim 2, said 1st data division consists of text data in a compound mail transmission system given in above-mentioned claim 1, and said 2nd data division contains non-text data.

[0031]A complex data transmission system of claim 3 has a discriminating means which distinguishes whether said receiving set receives said 2nd data division from said 2nd means of communication based on access information included in said 1st data division in a compound mail transmission system given in above-mentioned claim 1.

[0032]As for a complex data transmission system of claim 4, in a compound mail transmission system given in above-mentioned claim 1, said 2nd transport unit is built in as a server in said sending set.

[0033]A complex data transmission system of claim 5 is characterized by said complex data being compound statement document data in a compound mail transmission system given in above-mentioned claim 1.

[0034]A complex data transmission system of claim 6 includes at least one file which said complex data became independent of in a compound mail transmission system given in above-mentioned claim 1.

[0035]In a compound mail transmission system given in above-mentioned claim 1, as for a complex data transmission system of claim 7, said complex data contains at least one compression and a conversion file.

[0036]In a compound mail transmission system given in above-mentioned claim 1, as for a complex data transmission system of claim 8, said complex data includes an archive.

[0037]A complex data transmission system of claim 9 is characterized by said 1st means of communication being an E-mail means of communication in a compound mail transmission system given in above-mentioned claim 1.

[0038]In a compound mail transmission system given in above-mentioned claim 1, as for a complex data transmission system of claim 10, said compound mail transmission system said 1st transport unit two or more preparations and said sending set, It is constituted so that the 1st same data division may be transmitted to each of two or more of said 1st transport units.

[0039]As for a complex data transmission system of claim 11, in a compound mail transmission system given in above-mentioned claim 1, said compound mail transmission system comprises two or more preparations and a receiving set of 1 in said receiving set to other receiving sets so that transmission of said 1st data division is possible.

[0040]It is constituted so that it may transmit using a communications protocol according to said 1st transport unit or said 2nd transport unit, when said sending set transmits a complex data transmission system of claim 12 said complex data in a compound mail transmission system given in above-mentioned claim 1.

[0041]A complex data transmission system of claim 13 is characterized by said 2nd transport unit being a WWW server in a compound mail transmission system given in above-mentioned claim 1.

[0042]A complex data transmission system of claim 14 is characterized by said 2nd *transport unit being a FTP server in a compound mail transmission system given in above-*mentioned claim 1.

[0043]As for a complex data transmission system of claim 15, in a compound mail transmission system given in above-mentioned claim 1, said sending set is constituted so that address information of a field where said 2nd data division in said data accumulation means is accumulated in said 1st data division may be added.

[0044]In a compound mail transmission system given in above-mentioned claim 1, a complex data transmission system of claim 16 is constituted so that said sending set may add size information of said 2nd data division to said 1st data division.

[0045]In a compound mail transmission system given in above-mentioned claim 1, a complex data transmission system of claim 17 is constituted so that said sending set may change said 2nd data division into HTML form and it may transmit.

[0046]In a compound mail transmission system given in above-mentioned claim 1, a complex data transmission system of claim 18 said sending set, It has a capacity discriminating means which distinguishes whether it has sufficient storage capacity for said 2nd transport unit to accumulate said 2nd data division transmitted, It is constituted so that transmission of said 1st data division and the 2nd data division may be stopped, when it did not have sufficient storage capacity by said capacity discriminating means and is distinguished.

[0047]In a compound mail transmission system given in above-mentioned claim 1, a complex data transmission system of claim 19 is constituted so that said sending set may transmit said 2nd data division to said 2nd transport unit with a protocol of a file transfer.

[0048]In a compound mail transmission system given in above-mentioned claim 1, as for a complex data transmission system of claim 20, said 2nd transport unit transmits said 2nd data division to said receiving set with an HTTP protocol.

[0049]In a compound mail transmission system given in above-mentioned claim 1, a complex data transmission system of claim 21 is constituted so that said 2nd transport unit may transmit said 2nd data division to said receiving set with a protocol of a file transfer.

[0050]In a compound mail transmission system given in above-mentioned claim 1, a complex data transmission system of claim 22 is constituted so that said sending set may perform at least one processing of a data format conversion process, data compression processing, and archive-ized processing to said 2nd data division.

[0051]In a compound mail transmission system given in above-mentioned claim 1, a complex data transmission system of claim 23 said sending set, According to a kind of data of said 2nd data division, so that at least one processing of a data format conversion process, data compression processing, and archive-ized processing may be performed, Or it has a control means which controls the sending set concerned so that neither said data format conversion process nor data compression processing nor archive-ized processing may be performed.

[0052]In a compound mail transmission system given in above-mentioned claim 1 a complex data transmission system of claim 24, A file which consists of a file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed, and the 2nd data division before said data format conversion process or data compression processing is performed is included.

[0053]In a compound mail transmission system given in above-mentioned claim 24, a complex data transmission system of claim 25 said sending set, When machine environment of said receiving set is unknown, a file which consists of a file which consists of the 2nd data division to which said data format conversion process or data compression processing was performed, and the 2nd data division before said data format conversion process or data compression processing is performed is included.

[0054]A complex data transmission system of claim 26 is provided with a machine environment memory measure which memorizes information concerning [said sending set] machine environment of said receiving set in a compound mail transmission system given in above-mentioned claim 1.

[0055]In a compound mail transmission system given in above-mentioned claim 26, a complex data transmission system of claim 27 said sending set, Based on information about machine environment memorized by said machine environment memory measure, to said 2nd data division, it is constituted so that at least one processing of a data format conversion process, data compression processing, and archive-ized processing may be performed.

[0056]A complex data transmission system of claim 28 said compound mail transmission system including two or more receiving sets in a compound mail transmission system given in above-mentioned claim 1 said sending set, Inside of 2nd at least one data division that consists of forms corresponding to a kind of said receiving set when performing simultaneous transmissive communication to said two or more receiving sets, When the 2nd same data division is already transmitted to said 2nd transport unit, it is constituted so that the 2nd data division that consists of the form concerned may not be transmitted.

[0057]A complex data transmission system of claim 29 said compound mail transmission system including two or more receiving sets in a compound mail transmission system given in above-mentioned claim 1 said sending set, When performing simultaneous transmissive communication to said two or more receiving sets, it is constituted so that the 1st data division corresponding to a kind of two or more of said receiving sets may be transmitted to said two or more receiving sets, respectively.

[0058]In a compound mail transmission system given in above-mentioned claim 29, a complex data transmission system of claim 30 said sending set, When performing said simultaneous transmissive communication, it is constituted so that address information of a field where the 2nd data division that turns into said 1st data division from form corresponding to a kind of said receiving set in said data accumulation means is accumulated may be added.

[0059]In a compound mail transmission system given in above-mentioned claim 29, a complex data transmission system of claim 31 said sending set, When performing said simultaneous transmissive communication, it is constituted so that kind-of-data information on the 2nd data division that turns into said 1st data division from form corresponding to a kind of said receiving set in said data accumulation means may be added.

[0060]In a compound mail transmission system given in above-mentioned claim 29, a complex data transmission system of claim 32 said sending set, When performing said simultaneous transmissive communication, it is constituted so that size information of the 2nd data division that turns into said 2nd data division from form corresponding to a kind of said receiving set in said data accumulation means may be added.

[0061]A sending set which a complex data transmission system of claim 33 has the separating mechanism which divides complex data into two or more data divisions, and transmits said two or more data divisions, A reception means which receives at least one data division among said two or more data divisions, Two or more displaying means which display said at least one received data division, A receiving set which has an access request means to output an access request of data divisions other than said at least one received data division, based on access information included in a data division displayed on said two or more displaying means, The 1st transport unit that transmits said at least one data division transmitted from said sending set to said receiving set, It has a data accumulation means to accumulate data divisions other than at least one data division transmitted to said 1st transport unit, and the 2nd transport unit that transmits a data division accumulated in said data accumulation means according to an access request outputted from said receiving set to said receiving set is included.

[0062]In a compound mail method of communication of a compound mail transmission system which has a receiving set which receives a sending set with which a compound mail method of communication of claim 34 transmits complex data, and said complex data, A step which divides complex data into the 1st data division and the 2nd data division, A step which transmits said 1st separated data division, and a step which transmits to a data accumulation means and accumulates said 2nd separated data division, A step which receives and displays said 1st transmitted data division in said receiving set, A step which outputs an access request of said 2nd data division from said receiving set to said data accumulation means based on access information included in said 1st data division, It consists of a step which receives said 2nd data division sent out from said data accumulation means according to said access request in said receiving set.

[0063]A step to which a compound mail method of communication of claim 35 receives said 2nd data division in a compound mail method of communication given in above-mentioned claim 34 is characterized by being a step which displays said 2nd data division on said receiving set.

[0064]A step to which a compound mail method of communication of claim 36 receives said 2nd data division in a compound mail method of communication given in above-mentioned claim 34 is characterized by being a step which memorizes said 2nd data division to said receiving set.

[0065]As for a compound mail method of communication of claim 37, said 1st data division consists of text data in a compound mail method of communication given in above-mentioned claim 34, and said 2nd data division contains a non-text data part.

[0066]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 38, It has a step which distinguishes whether said 2nd data division is read from said data accumulation means based on access information included in said 1st data division following a step which receives and displays said 1st data division.

[0067]In a step which distinguishes whether a compound mail method of communication of claim 39 reads said 2nd data division in a compound mail method of communication given in above-mentioned claim 34, when said 2nd data division was not read and it distinguishes, complex data reception is interrupted.

[0068]As for a compound mail method of communication of claim 40, in a compound mail method of communication given in above-mentioned claim 34, said data accumulation means is built in said sending set.

[0069]A compound mail method of communication of claim 41 is characterized by said complex data being compound statement document data in a compound mail method of communication given in above-mentioned claim 34.

[0070]In a compound mail method of communication given in above-mentioned claim 34, as for a compound mail method of communication of claim 42, said complex data includes at least one independent file.

[0071]In a compound mail method of communication given in above-mentioned claim 34, as for a compound mail method of communication of claim 43, said complex data contains at least one compression and a conversion file.

[0072]In a compound mail method of communication given in above-mentioned claim 34, said compound mail of a compound mail method of communication of claim 44 includes an archive.

[0073]At least one side of a step which a compound mail method of communication of claim 45 delivers a step which transmits said 1st data division, and said 2nd data division in a compound mail method of communication given in above-mentioned claim 34 is characterized by being an E-mail means of communication.

[0074]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 46, Said compound mail transmission system has the 1st means of communication that transmits the 1st data division transmitted by said sending set to said reception means, and transmits the 1st same data division to two or more 1st means of communication in a step which transmits said 1st data division.

[0075]In a compound mail method of communication given in above-mentioned claim 34, said compound mail transmission system is provided with two or more receiving sets, and a compound mail method of communication of claim 47 has a step which transmits said 1st data division to other receiving sets from a receiving set of 1.

[0076]A compound mail method of communication of claim 48 contains a step which chooses a communications protocol which transmits said 1st data division or said 2nd data division in a compound mail method of communication given in above-mentioned claim 34.

[0077]A compound mail method of communication of claim 49 is characterized by said data accumulation means being a WWW server in a compound mail method of communication given in above-mentioned claim 34.

[0078]A compound mail method of communication of claim 50 is characterized by said data accumulation means being a FTP server in a compound mail method of communication given in above-mentioned claim 34.

[0079]A step to which a compound mail method of communication of claim 51 transmits said 1st data division in a compound mail method of communication given in above-mentioned claim 34 contains a step which adds address information of said data accumulation means by which said 2nd data division is accumulated in said 1st data division.

[0080]A step to which a compound mail method of communication of claim 52 transmits said 1st data division in a compound mail method of communication given in above-mentioned claim 34 contains a step which adds size information of said 2nd data division to said 1st data division.

[0081]A step which a compound mail method of communication of claim 53 transmits said 2nd data division to said data accumulation means in a compound mail method of communication given in above-mentioned claim 34, and is accumulated contains a step which changes said 2nd data division into HTML form.

[0082]A step which a compound mail method of communication of claim 54 transmits said 2nd data division to said data accumulation means in a compound mail method of communication given in above-mentioned claim 34, and is accumulated, A step which distinguishes whether said data accumulation means has sufficient storage capacity to accumulate said 2nd data division is included.

[0083]In a step which transmits to said data accumulation means and accumulates said 2nd data division, a compound mail method of communication of claim 55 transmits said 2nd data division with a protocol of a file transfer in a compound mail method of communication given in above-mentioned claim 34.

[0084]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 56, In a step which receives the 2nd data division sent out from said data accumulation means in a receiving set, said 2nd data division is transmitted to said receiving set with an HTTP protocol.

[0085]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 57, In a step which receives the 2nd data division sent out from said data accumulation means in a receiving set, said 2nd data division is transmitted to said receiving set with a protocol of a file transfer.

[0086]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 58, A step which receives the 2nd data division sent out from said data accumulation means in a receiving set contains a step which performs at least one processing of a data format conversion process, data compression processing, and archive-ized processing to said 2nd data division.

[0087]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 59, To a step which transmits said 1st data division, according to a kind of data of said 2nd data division, . [whether at least one processing of a data format conversion process, data compression processing, and archive-ized processing is performed, and said 2nd data division is transmitted, and] Or a step which distinguishes whether said 2nd data division is transmitted without performing both said data format conversion process data compression processing and archive-ized processing is included.

[0088]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 60, A file which consists of a file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed, and the 2nd data division before said data format conversion process or data compression processing is performed is transmitted to said accumulation means.

[0089]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 61, A file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed when machine environment of said receiving set is unknown, A file which consists of the 2nd data division before said data format conversion process or data compression processing is performed is transmitted to said accumulation means.

[0090]A compound mail method of communication of claim 62 is memorizing-beforehand-information about machine environment of said receiving set characterized by said sending set in a compound mail method of communication given in above-mentioned claim 34.

[0091]In a step which a compound mail method of communication of claim 63 transmits said 2nd data division to said data accumulation means in a compound mail method of communication given in above-mentioned claim 34, and is accumulated, Based on information about said machine environment, at least one processing of a data format conversion process, data compression processing, and archive-ized processing is performed to said 2nd data division.

[0092]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 64, In a step which transmits to said data accumulation means and accumulates said 2nd data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, When the 2nd same data division is already transmitted to said data accumulation means among 2nd at least one data division that consists of forms corresponding to a kind of said receiving set, the 2nd data division that consists of the form concerned is not transmitted.

[0093]In a compound mail method of communication given in above-mentioned claim 34 a compound mail method of communication of claim 65, When performing simultaneous transmissive communication to two or more receiving sets from said sending set, in a step which transmits said 1st data division, the 1st data division corresponding to each of two or more of said receiving sets is transmitted to said two or more receiving sets, respectively.

[0094]In a compound mail method of communication given in above-mentioned claim 65 a compound mail method of communication of claim 66, In a step which transmits said 1st data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, Address information of a field where 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means is accumulated in said 1st data division is added and carried out.

[0095]In a compound mail method of communication given in above-mentioned claim 65 a compound mail method of communication of claim 67, In a step which transmits said 1st data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, Kind-of-data information on 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means is added to said 1st data division, and it transmits to said two or more receiving sets, respectively.

[0096]In a compound mail method of communication given in above-mentioned claim 65 a compound mail method of communication of claim 68, In a step which transmits said 1st data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, Size information of 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means is added to said 1st data division, and it transmits to said two or more receiving sets, respectively.

[0097]In a compound mail method of communication of a compound mail transmission system which has a receiving set which receives a sending set with which a compound mail method of communication of claim 69 transmits complex data, and said complex data, A step which divides complex data into two or more data divisions, and the 1st transmission step that transmits at least one data division through at least one transmission route among said two or more separated data divisions, At least one 1st transfer step which transmits at least one data division contained in said two or more data divisions transmitted from said sending set to said receiving set, A displaying step which displays a data division transmitted in said 1st transmission step on said receiving set, A data accumulation step which transmits to a data accumulation means and accumulates at least one data division other than said transmitted data division, A step which outputs an access request to a data division accumulated in said data accumulation means in said data accumulation step based on access information included in a data division displayed in said displaying step, It consists of at least one 2nd transfer step which transmits a data division accumulated in said data accumulation means according to said outputted access request to said receiving set.

[0098]A process from which a recording medium of claim 70 separates complex data into a computer at the 1st data division and the 2nd data division, A process of transmitting said 1st separated data division, and a process of transmitting to a data accumulation means and accumulating said 2nd separated data division, A process of receiving and displaying said 1st transmitted data division in said receiving set, A process of outputting an access request of said 2nd data division from said receiving set to said data accumulation means based on access information included in said 1st data division, A program for performing a process of receiving said 2nd data division sent out from said data accumulation means according to said access request in said receiving set was recorded by said computer in form which can be read.

[0099]A process at which a recording medium of claim 71 receives said 2nd data division in a recording medium given in above-mentioned claim 70 is characterized by being the process of displaying said 2nd data division on said receiving set.

[0100]A process at which a recording medium of claim 72 receives said 2nd data division in a recording medium given in above-mentioned claim 70 is characterized by being the process of memorizing said 2nd data division to said receiving set.

[0101]As for a recording medium of claim 73, said 1st data division consists of text data in a recording medium given in above-mentioned claim 70, and said 2nd data division contains a non-text data part.

[0102]In a recording medium given in above-mentioned claim 70, a recording medium of claim 74 said program, It has the process of distinguishing whether said 2nd data division being read from said data accumulation means based on access information included in said 1st data division, following a process of receiving and displaying said 1st data division.

[0103]In a recording medium given in above-mentioned claim 70, in a process of distinguishing whether said 2nd data division being read, a recording medium of claim 75 interrupts complex data reception, when said 2nd data division was not read and it distinguishes.

[0104]As for a recording medium of claim 76, in a recording medium given in above-mentioned claim 70, said data accumulation means is built in said sending set.

[0105]A recording medium of claim 77 is characterized by said complex data being compound statement document data in a recording medium given in above-mentioned claim 70.

[0106]A recording medium of claim 78 includes at least one file which said complex data became independent of in a recording medium given in above-mentioned claim 70.

[0107]In a recording medium given in above-mentioned claim 70, as for a recording medium of claim 79, said complex data contains at least one compression and a conversion file.

[0108]In a recording medium given in above-mentioned claim 70, said compound mail of a recording medium of claim 80 includes an archive.

[0109]At least one side of a process which a recording medium of claim 81 delivers a process of transmitting said 1st data division, and said 2nd data division, in a recording medium given in above-mentioned claim 70 transmits said 1st data division or said 2nd data division by an E-mail means of communication.

[0110]In a process of transmitting said 1st data division, a recording medium of claim 82 transmits the 1st same data division to two or more 1st means of communication that transmits said 1st data division transmitted to said reception means in a recording medium given in above-mentioned claim 70.

[0111]In a recording medium given in above-mentioned claim 70, as for a recording medium of claim 83, said program includes a process of transmitting said 1st data division to other receiving sets from a receiving set of 1.

[0112]A recording medium of claim 84 includes a process of choosing a communications protocol with which said program transmits said 1st data division or said 2nd data division, in a recording medium given in above-mentioned claim 70.

[0113]A recording medium of claim 85 is characterized by said data accumulation means being a WWW server in a recording medium given in above-mentioned claim 70.

[0114]A recording medium of claim 86 is characterized by said data accumulation means being a FTP server in a recording medium given in above-mentioned claim 70.

[0115]A process to which a recording medium of claim 87 transmits said 1st data division in a recording medium given in above-mentioned claim 70 includes a process of adding address information of said data accumulation means by which said 2nd data division is accumulated in said 1st data division.

[0116]A process to which a recording medium of claim 88 transmits said 1st data division in a recording medium given in above-mentioned claim 70 includes a process of adding size information of said 2nd data division to said 1st data division.

[0117]A process which a recording medium of claim 89 transmits said 2nd data division to said data accumulation means in a recording medium given in above-mentioned claim 70, and is accumulated includes a process of changing said 2nd data division into HTML form.

[0118]A process which a recording medium of claim 90 transmits said 2nd data division to said data accumulation means in a recording medium given in above-mentioned claim 70, and is accumulated includes a process of distinguishing whether said data accumulation means having sufficient storage capacity to accumulate said 2nd data division.

[0119]In a process of transmitting to said data accumulation means and accumulating said 2nd data division, a recording medium of claim 91 transmits said 2nd data division with a protocol of a file transfer in a recording medium given in above-mentioned claim 70.

[0120]In a process of receiving the 2nd data division to which a recording medium of claim 92 was sent out from said data accumulation means in a recording medium given in above-mentioned claim 70 in a receiving set, said 2nd data division is transmitted to said receiving set with an HTTP protocol.

[0121]In a process of receiving the 2nd data division to which a recording medium of claim 93 was sent out from said data accumulation means in a recording medium given in above-mentioned claim 70 in a receiving set, said 2nd data division is transmitted to said receiving set with a protocol of a file transfer.

[0122]A process received in a receiving set the 2nd data division to which a recording medium of claim 94 was sent out from said data accumulation means in a recording medium given in above-mentioned claim 70, A process of performing at least one processing of a data format conversion process, data compression processing, and archive-ized processing is included to said 2nd data division.

[0123]A process to which a recording medium of claim 95 transmits said 1st data division in a recording medium given in above-mentioned claim 70, . [whether according to a kind of data of said 2nd data division, at least one processing of a data format conversion process, data compression processing, and archive-ized processing is performed, and said 2nd data division is transmitted and] Or a process of distinguishing whether said 2nd data division being transmitted without performing both said data format conversion process data compression processing and archive-ized processing is included.

[0124]In a recording medium given in above-mentioned claim 70 a recording medium of claim 96, A file which consists of a file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed, and the 2nd data division before said data format conversion process or data compression processing is performed is transmitted to said accumulation means.

[0125]In a recording medium given in above-mentioned claim 70 a recording medium of claim 97, A file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed when machine environment of said receiving set is unknown, A file which consists of the 2nd data division before said data format conversion process or data compression processing is performed is transmitted to said accumulation means.

[0126]A recording medium of claim 98 is memorizing-beforehand-information about machine environment of said receiving set characterized by said sending set in a recording medium given in above-mentioned claim 70.

[0127]In a process which a recording medium of claim 99 transmits said 2nd data division to said data accumulation means in a recording medium given in above-mentioned claim 70, and is accumulated, Based on information about said machine environment, at least one processing of a data format conversion process, data compression processing, and archive-ized processing is performed to said 2nd data division.

[0128]In a recording medium given in above-mentioned claim 70, a recording medium of claim 100 said program, In a step which transmits to said data accumulation means and accumulates said 2nd data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, When the 2nd same data division is already transmitted to said data accumulation means among 2nd at least one data division that consists of forms corresponding to a kind of said receiving set, the 2nd data division that consists of the form concerned is not transmitted.

[0129]In a recording medium given in above-mentioned claim 70, a recording medium of claim 101 said program, When performing simultaneous transmissive communication to two or more receiving sets from said sending set, in a process of transmitting said 1st data division, the 1st data division that consists of form corresponding to each of two or more of said receiving sets is transmitted to said two or more receiving sets, respectively.

[0130]In a recording medium given in above-mentioned claim 101, a recording medium of claim 102 said program, In a process of transmitting said 1st data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, Address information of a field where 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means is accumulated in said 1st data division is added and carried out.

[0131]In a recording medium given in above-mentioned claim 101, a recording medium of claim 103 said program, In a process of transmitting said 1st data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, Kind-of-data information on 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means is added to said 1st data division, and it transmits to said two or more receiving sets, respectively.

[0132]In a recording medium given in above-mentioned claim 101, a recording medium of claim 104 said program, In a process of transmitting said 1st data division when performing simultaneous transmissive communication to two or more receiving sets from said sending set, Size information of 2nd at least one data division corresponding to a kind of said receiving set in said data accumulation means is added to said 1st data division, and it transmits to said two or more receiving sets, respectively.

[0133]A process from which a recording medium of claim 105 separates complex data into a computer at two or more data divisions, The 1st transmission process that transmits at least one data division through at least one transmission route among said two or more separated data divisions, At least one 1st transfer process of transmitting at least one data division contained in said two or more data divisions transmitted from said sending set to said receiving set, A display process of displaying a data division transmitted in said 1st transmission step on said receiving set, A data accumulation process of transmitting to a data accumulation means and accumulating at least one data division other than said transmitted data division, A process of outputting an access request to a data division accumulated in said data accumulation means in said data accumulation process based on access information included in a data division displayed in said displaying step, A program for performing at least one 2nd transfer process of receiving a data division sent out to said data accumulation means according to said outputted access request in said receiving set was recorded by said computer in form which can be read.

[0134]

[Embodiment of the Invention]Hereafter, the embodiment of this invention is described with reference to drawings.

[0135](A 1st embodiment) A 1st embodiment of this invention is first described with reference to drawing 1 - drawing 3.

[0136]Drawing 1 is a mimetic diagram showing the flow of the E-mail at the time of transmitting and receiving compound mail on the Internet using the e-mail transport unit concerning this embodiment.

[0137]A sending person and an addressee transmit in the figure and receive compound mail mutually via the Internet 13.

[0138]A sending person performs creation and transmission of compound mail using the transmitting side electronic mail software 12 which operates on the transmitting side personal computer (henceforth "transmitting side PC") 11. Two or more addressees (in this embodiment, they may be three persons), Have the mail address provided in a meaning for every addressee, and an addressee, respectively A receiver personal computer. (It is hereafter called "receiver PC") Reception of compound mail, access, and a display are performed using the receiver e-mail software wear 18a-18c and WWW browsers 19a-19c which operate on 17a - 17c.

[0139]In the numerals 12, 18, and 19 shown in drawing 1. The enlarged drawing of the screen of the transmitting side electronic mail software 12 currently displayed on the display screen of transmitting side PC11, respectively, They are an enlarged drawing of the screen of the receiver e-mail software wear 18c currently displayed on the display screen of receiver PC17c, and an enlarged drawing of the screen of WWW browser 19c currently displayed on the display screen of receiver PC17c.

[0140]The E-mail which the sending person created as transmitting mail is divided into a text mail part and a compound mail part.

[0141]A text mail part via the e-mail channels of communication on the Internet 13 from the transmitting side email server 15 which receives only the text mail part from transmitting side PC11 to receiving mail server 16 a-c via the usual E-mail channels of communication, It is received by the receiver e-mail software wear 18c which operates on receiver PC17 a-c. At the time of the simultaneous transmissive communication which transmits mail of an identical content to two or more addressees, it is similarly received by the receiver e-mail software wear 18a-18c which operates on receiver PC17a - 17c through the receiver mail servers 16a-16c for every addressee.

[0142]From transmitting side PC11, it is transmitted to WWW server 14, and a compound mail part is received and accumulated by WWW server 14.

[0143]An addressee accesses the compound mail part currently stored in WWW server 14 by browser 19 a-c based on the address information contained in the text mail part received by receiver e-mail software wear 18 a-c, and displays on the display screen of receiver PC17 a-c.

[0144]One's homepage field where ** sending user has WWW server 14 on the WWW server of an Internet provider, for example, ** It installs in the field for these electronic mail software provided on the WWW server in intranet environment, the field on the WWW server of the e-mail vender provided for these electronic mail software on ** Internet, etc., and the case where it applies can be considered. In the above-mentioned **, generally the user who has contracted with the Internet provider can assign the directory capacity of certain size on a provider's WWW server, and, more specifically, has the right to interpose one's homepage, for example. Therefore, compound mail can be transmitted in this case, using its homepage field as WWW server 14. [on a provider's WWW server]

[0145]The address of a file set on this WWW server 14, It is what unified the file name which generated the predetermined realm name on WWW server 14 at random with the publicly known random number generation algorithm, and becomes the URL (Uniform Resource Locator) form which are standard address format, such as a file on the Internet.

[0146]Drawing 2 is a flow chart which shows the compound transmitting mail procedure concerning this embodiment.

[0147]In transmitting side PC11, the transmitting side electronic mail software 12 is used by a transmitting mail person, text data "Hello -- this is the mail containing image data -- " -- the compound mail which consists of image data files being created, and, This procedure will be started if transmission of the completed compound mail is directed after setting out of information required for the mail address and other transmitting mail of the singular number or two or more addressees.

[0148]First, a compound mail body with the transmitting side electronic mail software 12. It is changed into the HTML form which is a file format which can be read by the browser, and a compound mail part is created (Step S21), The URL address of WWW server 14 which transmits the created compound mail part is become final and conclusive (Step S22), and the size of the created compound mail part is called for (Step S23). And the text mail part which comprises size information etc. of the compound mail part called for at the text part extracted from the send data of compound mail, the URL address called for at Step S22, and Step S23 is created (Step S24), It is distinguished whether there is any sufficient availability to receive a compound mail part on WWW server 14 (Step S25).

[0149]When it can use monopolistically by one person in Step S25 like [in ** which mentioned above the field on WWW server 14], In the e-mail software 12, it asks for availability size from hysteresis information, such as area size of WWW server 14 known beforehand, and size of the compound mail part which transmitted until now, The size of free space can be checked by comparing this with the size of the compound mail part which is going to transmit, without performing actual communication. When sharing the field on WWW server 14 with other transmitting mail persons like [in the above-mentioned ** or **], an availability can be certainly calculated by asking WWW server 14 free space size with a predetermined protocol.

[0150]When there is availability sufficient by distinction of Step S25, The text mail part created in Step S24 is transmitted to the transmitting side mail server 15, when only the specified number of addressees performs the usual mail protocol (for example, SMTP) (Step S26), A compound mail part is transmitted to the field of WWW server 14 by performing standard file transfer protocol FTP (File Transfer Protocol) in the file name and address which were called for at Step S22 (Step S27), and this procedure is ended after that.

[0151]On the other hand, when there is not sufficient availability, the warning message which shows that is displayed by control of the transmitting side electronic mail software 12 on the display screen of transmitting side PC11 (Step S28), and this transmission procedure is stopped by distinction of Step S25 after that.

[0152]The text mail part transmitted in Step S26, From the transmitting side mail server 15, the course of the usual E-mail on the Internet 13 is passed, and it is received by the reception mail software 18a-18c of receiver PC17a - 17c via the receiver mail servers 16a-16c corresponding to each addressee's mail address.

[0153]The portion currently displayed in drawing 1 as numerals 18c' showed is a text mail part, "Hello which is a text data portion of the original compound mail -- this is the mail containing image data -- " -- the URL address ("0123abcd.html [http:/www.patent.temp/mail /]" in the example of drawing 1.) of the compound mail part which is on WWW server 14 downward Size information of ****** and a compound mail part ("" (253 K bytes) is displayed in the example of drawing 1.)

[0154]Drawing 3 is a flow chart which shows the compound mail receiving procedure performed in receiver PC17.

[0155]First, the text mail part received with the receiver electronic mail software 18c on receiver PC17c is read (Step S31), and it is determined whether receive a compound mail part from the contents (Step S32). Namely, based on the contents of the text mail part of the original E-mail at Step S32, It is distinguished whether a compound mail part needs to be received and it is distinguished whether there is any sufficient availability to receive this compound mail part to the storage capacity of receiver PC17c based on the size information of the compound mail part in a text mail part, Based on the junction state of the size information of the compound mail part in a text mail part, and the communication line of the present receiver PC17c, etc., it is distinguished whether time required for reception of a compound mail part is in tolerance level.

[0156]By distinction of Step S32, when not receiving compound mail, this procedure is ended promptly. When receiving compound mail, it is distinguished whether the receiver electronic mail software 18c on receiver PC17c has "clickable URL" function (Step S33). "Clickable URL" is a function currently supported by much electronic mail software here, The function which starts a browser by very easy operation of double-clicking the URL address described in the mail text by a mouse button, and accesses an applicable URL address is said.

[0157]When the receiver electronic mail software 18c is provided with "clickable URL" function and the URL address in a text mail part is double-clicked by the mouse button (Step S34), by the browser 19c. According to the URL address with which it was ordered, access to the compound mail part on the directory of WWW server 14 is performed (Step S35). In the browser 19, the predetermined compound mail part which WWW server 14 transmitted with the standards HTTP (Hyper Text Transfer Protocol) protocol in response to this access is received (Step S36), The compound mail part received by the browser 19c is displayed (Step S37).

[0158]On the other hand, by distinction of Step S33, when it does not have clickable URL, The browser 19c is started separately (Step S38), and access to (Step S39) and a compound mail part is performed by inputting the URL address in a text mail part into the address area of the browser 19c by copy-and-paste operation (Step S35).

[0159]Thus, as shown by numerals 19c' in drawing 1, a compound mail part including the HTML-ized picture can be seen, for example like the homepage on the Internet 13.

[0160]Much electronic mail software is provided with the highlighting function make it easy to check by drawing an underline into the URL portion in a text as shown in 18c' of drawing 1, or changing a color. With this URL section highlighting function, the e-mail addressee can identify URL in a mail text easily.

[0161]As explained above, since according to this embodiment an E-mail is divided into a text mail part and a compound mail part and each part was transmitted and received separately, the conventional problem mentioned above is solved as follows.

[0162]** Although the text mail part in this embodiment passes along the usual e-mail channels of communication using the standard protocols for E-mails (SMTP, POP3, etc.) about restriction of the mail size which can transmit, it is the usual text format, and since it is small size, don't produce the problem of transmission and reception.

[0163]On the other hand, although the transmission to receiver PC17 a-c whose transmission to WWW server 14 from transmitting side PC11 is a standard file transfer protocol from a file transfer protocol and WWW server 14 used the HTTP protocol about the compound mail part, There is no restriction by data size [like the standard protocol for E-mails] whose all are, a kind of data, a communication path, etc. as a matter of fact. Therefore, according to this embodiment, the conventional problem of restriction of mail size which was mentioned above is solved.

[0164]** About reception of the compound mail by a receiver, and un-guaranteeing of a display, since the text mail part in this embodiment is the usual text format and is small size, don't produce the problem of reception or display processing.

[0165]On the other hand, about a compound mail part, it is changed into HTML form, and it is received by browser 19 a-c and displayed. Any browsers can read HTML form data, and also since a browser is generally extremely rich in power of expression and is supporting many data formats, it can display various kinds of compound mails convenient.

[0166]Since the browser has an electronic mail function in which it has spread through widely and a typical browser has a clickable URL function to various plat forms, In PC connected to the Internet 13 at least, the E-mail transmitted by the procedure mentioned above is receivable.

[0167]** About the complicatedness of handling of compound mail data, and difficulty, it is received by the browser and the compound mail part in this embodiment is displayed, after being changed into HTML form. Any browsers can read HTML form data, and also since a browser is generally extremely rich in power of expression and is supporting many data formats, it can display various kinds of compound mails convenient.

[0168]** About the problem at the time of reception of large size mail, since the text data part in this embodiment is usual text format and small size, don't produce the problem at the time of reception.

[0169]About reception of a compound mail part, it is distinction of Step S32 of drawing 3, and an addressee can also determine the stage when an addressee can determine whether receive a compound mail part file, and the reception is performed. Since reception of a compound mail part is performed when an addressee's convenience is good, it can avoid the state [a time zone inconvenient to e-mail reception / a circuit or a personal computer] like conventional technology where it will be occupied by the reception.

[0170]** As mentioned above about pressure of the network traffic by the multiple address of large size mail, although a text mail part is transmitted to each reception destination which specified the multiple address in Step S16 of drawing 2, the broadcast mail in this embodiment, About a compound mail part, it is transmitted only once to WWW server 14 at Step S17 of drawing 2.

[0171]That is, it is only a text mail part with little data volume that the multiple address is carried out, and transmission of the compound mail part of large size is performed only once irrespective of the number of the multiple address points.

[0172]Since access to the compound mail part in WWW server 14 from each addressee is performed when the convenience for every addressee is good, neither concentration of network traffic nor concentration of the data to a specific mail server is produced.

[0173]Since the addressee who judged that reception of a compound mail part was unnecessary, seeing the contents of the text mail part does not perform access to WWW server 14, he can aim at further reduction of the network traffic as the whole.

[0174]Below, transmission of an E-mail is explained.

[0175]The mail transfer which generally sends the received E-mail to other addressees related to those contents in employment of an E-mail is performed widely, and almost all electronic mail software is supporting this mail transfer function.

[0176]The E-mail addressed to the old mail address is forwarded to a new mail address, for example with change of place of business, or practical use is widely presented with the automatic mail transfer of forwarding the E-mail addressed to an office to a house during a vacation etc.

[0177]When an e-mail addressee performs a mail transfer on the system concerning this embodiment using the receiver e-mail software wear 18c, only the text mail part of small size is transmitted, and it does not communicate until the addressee who needs it accesses the compound mail part of large size himself. A compound mail part is not received in a transmission point. Therefore, it is expectable to aim at further reduction of network traffic.

[0178]In particular, in an automatic mail transfer, since the receiving and sending of a compound mail part are not performed on a transmission point, the effect of reduction of network traffic will become still bigger.

[0179]Since access to a compound mail part is possible even if it is not the apparatus which received the E-mail if the URL address of the compound mail part is known, the same compound mail can also be read at office and a house, for example, without forwarding an E-mail.

[0180]According to this embodiment, an E-mail is divided into the text mail part of small size, and the compound mail part of large size as explained above, Since only the text mail part of small size transmitted to addressee reliance, and the compound mail part of large size was constituted so that it could see, when it accessed on a WWW server, While canceling the conventional problem, reduction of network traffic is attained also in transmission of e-mail, and transmission and reception of various compound mails are attained.

[0181](A 2nd embodiment), next a 2nd embodiment of this invention are described with reference to drawing 4 and drawing 5.

[0182]Drawing 4 is a mimetic diagram showing the flow of the E-mail at the time of transmitting and receiving compound mail on the Internet using the e-mail transport unit concerning this embodiment. In the figure, this embodiment is the point that transmitting side PC41 also has a function as WWW server 14, and is different from a 1st embodiment mentioned above. The e-mail-transmission software 42 operates in transmitting side PC41. The same number is given to the same component as drawing 1 of a 1st embodiment other than this.

[0183]Drawing 5 is a flow chart which shows the compound transmitting mail procedure concerning this embodiment.

[0184]using the transmitting side electronic mail software 42 in drawing 4 -- text data "Hello -- this is the mail containing image data -- " -- the compound mail which consists of image data is created. Information required for transmitting mail, such as a mail address of the singular number or two or more addressees, is set up after creation of compound mail, and if transmission of the completed compound mail is directed, processing of this flow chart will be started.

[0185]First, by the transmitting side electronic mail software 12, a compound mail body is changed into the HTML form which is a file format which can be read by the browser, and a compound mail part is created (Step S51).

[0186]And the URL address of transmitting side PC41 which has a WWW server function which places the created compound mail part is become final and conclusive (Step S52). This address should unify the file name which generated the realm name on transmitting side PC41 at random with the publicly known random number generation algorithm.

[0187]The text part which the size of the compound mail part created at Step S51 is called for (Step S53), and is extracted from the send data of compound mail, The text mail part which comprises size information etc. of the compound mail part called for at URL calculated at Step S52 and Step S53 is created (Step S54), and it is distinguished whether there is any sufficient availability to place a compound mail part on transmitting side PC41 (Step S55).

[0188]When there is availability sufficient by distinction of Step S55, The text mail part created in Step S54 according to each addressee's specified mail address, By performing the usual mail protocol (for example, SMTP), it is transmitted to the transmitting side mail server 15 (Step S56), and a compound mail part only the specified number of addressees by the file name called for at Step S52. It is copied to the predetermined region used as a WWW server on transmitting side PC41 (Step S57), and this procedure is ended after that.

[0189]On the other hand, when there is not sufficient availability, the warning message which shows that is displayed on the display screen of transmitting side PC41 by the transmitting side electronic mail software 42 (Step S58), and this transmission procedure is stopped by distinction of Step S55 after that.

[0190]The e-mail receiving procedure in this embodiment is the same as that of a 1st embodiment mentioned above except the composition that transmitting side PC41 of WWW server combination of the function of WWW server 14 is realized. That is, an addressee uses and accesses the browser 19c in the URL address described by the text mail part received on the receiver e-mail software wear 18c, and receives and displays a compound mail part by the browser 19c from transmitting side PC41.

[0191]It adds to the effect same according to this embodiment as explained above as a 1st embodiment mentioned above, Since communication of the compound mail part of large size was not performed at the time of transmitting mail, network traffic can be reduced and the compound mail part was placed into transmitting side PC41, the effect that management of the field which places a compound mail part can be simplified is acquired.

[0192](A 3rd embodiment), next a 3rd embodiment of this invention are described with reference to drawing 6 - drawing 9.

[0193]With an E-mail, conventionally The file of special forms, such as a document and not only a compound statement document but a spreadsheet, a file of presentation software, and an install program of the program software of executable code, There was a request of liking to transmit a thing including the file etc. which include the various files and directory structure below a specific directory like software development environment. This embodiment enables it to transmit the compound mail including a file which was mentioned above, or a directory structure + file.

[0194]Drawing 6 is a mimetic diagram showing the flow of the E-mail at the time of transmitting and receiving compound mail on the Internet using the e-mail transport unit concerning this embodiment concerning this embodiment. In the figure, the same number is given to the same component as the composition shown in drawing 1 of a 1st embodiment. In this embodiment, the compound transmitting mail software 61 which starts this invention on transmitting side PC11 operates. In this embodiment, FTP server 62 is adopted instead of WWW server 14 shown in drawing 1. About employment and installation of a FTP server, it is the same as that of WWW server 14 in a 1st embodiment.

[0195]Drawing 7 is a flow chart which shows the compound transmitting mail procedure concerning this embodiment.

[0196]By a transmitting mail person, the transmitting side electronic mail software 12 is used in transmitting side PC11, This procedure will be started if transmission of the completed compound mail is directed after comment inputs, such as explanation about one thru/or two or more files or specification of a directory, and a transmitting file to transmit to, and setting out of information required for an addressee's mail address and other E-mails.

[0197]In transmitting side PC11 which succeeded in directions of transmitting mail, the file format of the mail transmitted first is investigated and it is distinguished in consideration of the flexibility of a file format, the necessity for a data compression, or the effect of a data compression whether it is necessary to perform a data compression and conversion (Step S71). For example, when a transmitting file is a compressed file in one, data compression processing is distinguished as it is unnecessary. Also to the file which does not almost have an effect of a data compression that the JPEG form etc. which are the standard compression format of a still picture have little relative redundancy of a file, a data compression is distinguished as it is unnecessary. In such a case, the transmitting file itself becomes a compound mail part.

[0198]If a file format is a general-purpose form independent of a plat form, data conversion will be distinguished as it is unnecessary. On the other hand, when it is a special form peculiar to specific OS or application software, it will be distinguished if it is necessary to carry out data conversion.

[0199]By distinction of Step S71, when a data compression and a conversion process do not need to be performed, it is investigated whether data compression conversion format is specified (Step S74). When "the information required for an addressee's mail address and other mails" mentioned above understands beforehand an e-mail addressee's machine environment, i.e., OS of receiver PC17 a-c, compression, conversion file form which can be responded, etc., the data compression and the conversion format specification which were doubled with the receiver are included in it.

[0200]Drawing 8 is a figure showing an example of the registration format of the address book for specifying an addressee simply in transmitting side PC11. As shown in the figure, an addressee's name and not only a mail address but an addressee's machine environment can be registered into this address book. Therefore, to the addressee by whom machine environment is also registered into the address book, a sending person only specifies an addressee and a data compression and conversion format are also specified automatically.

[0201]For example, when an addressee is "Taro Yamada", the data compression and conversion format specified turn into exe form indicated at the head of the "support file format." This exe form is a form widely recognized as data compression format of self-extraction, and the addressee can get the file of even if it does not use special application at all and extracts the file of this form.

[0202]Similarly, although the addressee by whom the name is not registered into an address book, the name, and the mail address are registered, if receiver environment understands them also to the addressee by whom machine environment is not registered, they can specify a data compression and conversion format in advance of transmission. When receiver environment is unknown, un-specifying a data compression and conversion format is supposed.

[0203]When it returns to drawing 7 and a data compression and conversion format are specified by distinction of the above-mentioned step S72, according to the specification, a data compression and a conversion process are performed to a file or a directory, and a compound mail part is created (Step S73). For example, when it is "Taro Yamada" registered into the address book which the addressee showed to drawing 8, the data compression and conversion of one thru/or two or more files, or the directory which transmits are done at 1exe file format specified by the publicly known data compression and converting method.

[0204]And the URL address of FTP server 62 which transmits the created compound mail part is become final and conclusive (Step S74). Although determined by the same technique as a 1st or 2nd embodiment mentioned above, since a file transfer protocol needs to perform access to the file from an addressee, in this embodiment, the address of this FTP server 62 is determined as a URL address which starts in "ftp:."

[0205]Next, the size of the created compound mail part is called for (Step S75). What it asks for here is the size of the transmitting file of the origin treated as a compound mail part, when not performing a data compression and conversion, and when performing a data compression and conversion, it is the size of a data compression and the compound mail part after the conversion process was carried out at Step S73.

[0206]The comment about the file which transmits, the URL address determined at Step S74, The text mail part which comprises size information of the compound mail part for which it asked at Step S75, information about a data compression and conversion format, etc. is created (Step S76), It is distinguished whether there is any sufficient availability to receive a compound mail part on FTP server 62 (Step S77).

[0207]In Step S77, when there is sufficient availability, The text mail part created at Step S76 is transmitted to an addressee's specified mail address by the usual mail protocol (for example, SMTP) (Step S78), FTP transmission of the compound mail part is carried out to the predetermined region of FTP server 62 using the file name and address which were determined at Step S74 (Step S79), and this procedure is ended. Like a 2nd embodiment mentioned above, when transmitting side PC11 serves also as the function of FTP server 62, at Step S79, a compound mail part is copied to the predetermined region in transmitting side PC11 used as FTP server 62.

[0208]By distinction of Step S77, when the availability of a FTP server is not enough, a warning message is displayed by processing of the transmitting side electronic mail software 61 (Step S80), and this procedure is ended after that.

[0209]On the other hand, by distinction of Step S72, when a data compression and conversion format are not specified, A data compression and conversion are performed to one file of the compressed file form currently supported in much receiver environment, for example, zip form, (Step S81), Next, the address (URL) of FTP server 62 which sends a file is determined like the case of Step S74 (Step S82). And the sum of the size of the file after a data compression and conversion, the size of the original transmitting file, and both sizes is called for (Step S83), The comment about the file which transmits, the URL address of the compression and the conversion file on FTP server 62 called for at Step S82, The URL address of the original transmitting file, the size information of the compression and the conversion file on the FRT server 62 called for at Step S83, The text mail part which consists of size information of the original transmitting file, information about a data compression and conversion format, etc. is created (Step S84), and it is made to be the same as that of Step S75, It is distinguished by comparing the free space on FTP server 64 with the sum of said size whether the availability of FTP server 64 is enough (Step S85).

[0210]When there was availability sufficient by distinction of Step S85 and it is distinguished, The text mail part created at Step S84 to an addressee's specified mail address. It is transmitted by the usual mail protocols (for example, SMTP etc.) (Step S86), FTP transmission of compression, a conversion file, and the original transmitting file is carried out to the field which the URL address fixed at Step S82 of FTP server 64 shows (Step S87), and this procedure is ended after that. Like a 2nd embodiment mentioned above, when transmitting side PC11 serves also as the function of FTP server 62, at Step S87, compression, a conversion file, and the original transmitting file are copied to the predetermined region in transmitting side PC11 used as FTP server 62.

[0211]By distinction of Step S85, when there was not sufficient availability and it is distinguished, the warning message which shows that is displayed on the display of transmitting side PC11 by the transmitting side electronic mail software 62 (Step S88), and this procedure is ended by the stop of transmitting processing after that.

[0212]Drawing 9 is a flow chart which shows the compound mail receiving procedure performed in receiver PC17.

[0213]First, the text mail part received with the receiver electronic mail software 63c on receiver PC17c is read (Step S91), and it is determined whether receive a compound mail part from the contents (Step S92). Namely, based on the contents of the text mail part of the original E-mail at Step S92, It is distinguished whether a compound mail part needs to be received and it is distinguished whether there is any sufficient availability to receive this compound mail part to the storage capacity of receiver PC17c based on the size information of the compound mail part in a text mail part, Based on the junction state of the size information of the compound mail part in a text mail part, and the communication line of the present receiver PC17c, etc., it is distinguished whether time required for reception of a compound mail part is in tolerance level.

[0214]By distinction of Step S92, when not receiving a compound mail part, this procedure is ended promptly. When receiving a compound mail part, URL of the original transmitting file or URL of compression and a conversion file contained in the text mail part is chosen (Step S94). As mentioned above, in transmitting side PC11, URL of compression and a conversion file, URL of size information and the original file, and size information are included in the text mail part in the procedure of Step S84. For example, to enlarged drawing 63c' of the text mail part shown in drawing 6, the display with "< original copy >" or "< compressed file >", and the URL address and size information are indicated as a title about each of the original file and the compressive conversion file. "zip" indicated into the portion of the last of the URL address of compression and a conversion file shows that this compression and conversion file are the zip forms which are general-purpose data compression format. An addressee chooses the URL address of compression and a conversion file, when compression and a conversion file can be treated in self machine environment, being able to see the contents of the text mail part, and when it cannot treat, he can choose the URL address of the original file.

[0215]Next, it is distinguished whether the receiver electronic mail software 63c on receiver PC17c has "clickable URL" function (Step S94). When the receiver electronic mail software 63c is provided with "clickable URL" function and the URL address in a text mail part is double-clicked by the mouse button (Step S95), by the browser 64c. According to the URL address with which it was ordered, access to the compound mail part on the directory of FTP server 62 is performed (Step S96). And it is received by the browser 64c (Step S97), and the compound mail part transmitted by FTP server 62 with the standards file transfer protocol in response to this access is accumulated in the hard disk (un-illustrating) of receiver PC17c (Step S98).

[0216]When the receiver electronic mail software 63c is not provided with the clickable URL function by distinction of Step S94, When the browser 64c is started separately (Step S101) and inputs the URL address in a text mail part into the address area of the browser 64c by copy-and-paste operation, (Step S102), In Step S96, access to the compound mail part of FTP server 62 is performed.

[0217]It is distinguished whether the accumulated compound mail parts are compression and a conversion file (Step S99), and since it is already the original transmitting file (before compression and a conversion process) when it is not a compressive conversion file, this receiving procedure is ended as it is. When it is distinguished that they are compression and a conversion file, extraction of a file or reappearance by inverse transformation is performed using functions, such as compression, a conversion file thawing program, etc. with which receiver PC17c is equipped and which is not illustrated (Step S100), and this procedure is ended after that.

[0218]Drawing 10 and drawing 11 are flow charts which show the simultaneous transmissive communication procedure to two or more addressees of compound mail.

[0219]At least one file to transmit to on the transmitting side e-mail software wear 61 in transmitting side PC11, Or a transmitting mail person's directions of simultaneous transmissive communication will start this procedure after setting out of information required for transmission of the mail address and other E-mails of comment inputs, such as specification of a directory and explanation about a transmitting file, the singular number, or two or more addressees.

[0220]First, this procedure is ended, when it is distinguished whether transmitting processing was completed to all the specified addressees with the transmitting side electronic mail software 61 (Step S111) and transmitting processing is completed to all the addressees.

[0221]When the transmitting processing to all the addressees is not completed, the file format which transmits is investigated and it is distinguished in consideration of the flexibility of a file format, the necessity for a data compression, or the effect of a data compression whether a data compression conversion process is performed (Step S112). This distinction is performed by the same technique as Step S71 mentioned above, for example.

[0222]By distinction of Step S112, when not performing a data compression and a conversion process, it is distinguished whether the compound mail part of specification form, i.e., the original file, is already ending with transmitting (Step S113). This distinction is performed based on the flag information which is used in the transmitting side electronic mail software 61 used by this embodiment and which is not illustrated. This flag information is initialized by "un-transmitting" at the time of transmitting side electronic-mail-software 62 starting, and has "finishing [transmission]" set at the time of transmission. Therefore, it can be distinguished by seeing this flag information whether the file of the present specification form is ending with transmitting.

[0223]By distinction of Step S113, when it is not ending with transmitting, the URL address of FTP server 62 which transmits a compound mail part is become final and conclusive (Step S114). This RUL address is become final and conclusive by the same technique as a 1st or 2nd embodiment mentioned above. However, in this embodiment, in order for a file transfer protocol to perform access to the file from an addressee, a URL address is made into the address which starts in "ftp:."

[0224]And after the size of the compound mail part was called for (Step S115), The comment about the file which transmits, the URL address fixed at Step S114, The size of the compound mail part called for at Step S115, the information about a data compression and conversion format, The text mail part which comprises information etc. which show that it is the original file is created (Step S116), and it is distinguished whether sufficient availability to receive a compound mail part is on FTP server 62 (Step S117).

[0225]When there is availability sufficient by distinction of Step S117, FTP transmission of the compound mail part is carried out to the field which the URL address fixed at Step S114 on FTP server 62 shows (Step S118). When transmitting side PC11 serves also as the function of FTP server 62, in Step S118, a compound mail part is copied to the predetermined region in transmitting side PC11 used as FTP server 62. And the text mail part created at Step S116 is transmitted to the mail address of the addressee who is the present processing object by the usual mail protocol (Step S119).

[0226]After transmission of the text mail part to the addressee who is this transmission object is completed, a transmission object is changed by the next addressee (Step S120), and processing after Step S111 is performed again.

[0227]By distinction of the above-mentioned step S113, when the original file is already ending with transmitting, processing of Steps S114-S118 is skipped, it progresses to Step S119, and transmission of a text mail part is performed.

[0228]On the other hand, by distinction of Step S112, when compression and the conversion process of data are required, Like the case of Step S72 mentioned above, a sending person's specification, the mail address of the addressee under present processing, Based on the address book etc. which were shown in drawing 8, it is distinguished whether a data compression and conversion format are specified to the addressee concerned (Step S121), When a data compression and conversion format are specified, it is distinguished whether it is finishing [transmission of the data compression and the conversion format compound mail part file which are specified] (Step S122).

[0229]Here, when it is not ending with transmitting, a compound mail part is created by performing the data compression and conversion process by the form specified (Step S123). for example, the case where an addressee is "Taro Yamada" who showed drawing 8 -- transmission -- even if small, a data compression and a conversion process are performed to 1exe file format specified by the publicly known data compression and conversion method in one file or a directory.

[0230]Next, the URL address on FTP server 62 which sends a compound mail part is become final and conclusive (Step S124). A URL address is made into the address which starts in "ftp:" in order that the address on this FTP server 62 may perform access to the file from an addressee with a file transfer protocol like Step S114 mentioned above. When compression and conversion file form shall respond to the extension given to the last of a file name, for example, the data compression and the conversion process are performed to the file of the exe file format, the extension "exe" is given to the last of a file name.

[0231]The size of the compound mail part after decision of an address, and a data compression and a conversion process is called for (Step S125), The comment about the file which transmits, the URL address fixed at Step S124, The text mail part which comprises size information of the compound mail part called for at Step S125, information about a data compression and conversion format, etc. is created (Step S126), It is distinguished whether there is any availability sufficient like Step S117 mentioned above to receive a compound mail part on FTP server 62 (Step S127).

[0232]When there is availability sufficient by distinction of Step S127, FTP transmission of the compound mail part is carried out to the field which the URL address fixed at Step S114 on FTP server 62 shows (Step S128). When transmitting side PC11 serves also as the function of FTP server 62, in Step S128, a compound mail part is copied to the predetermined region in transmitting side PC11 used as FTP server 62. And the text mail part created at Step S126 is transmitted to the mail address of the addressee who is the present processing object by the usual mail protocol (Step S129). After transmission of the text mail part to the addressee who is this transmission object is completed, it progresses to Step S120 and a transmission object is changed by the next addressee.

[0233]By distinction of Step S122, when it is ending with transmitting about the compound mail part file of specification form, processing of Steps S123-S128 is skipped, it progresses to Step S129, and transmission of a text mail part is performed.

[0234]By distinction of the above-mentioned step S121, when a data compression and conversion format are not specified, It is distinguished whether the compound mail part of the common compressed file form (for example, zip form) currently supported by the present data compression and conversion format, i.e., much receiver machine environment, and the original transmitting mail are ending with transmitting (Step S130), When it is not ending with transmitting, data compression conversion of the compound mail part is carried out at 1 file format of common compressed file form (Step S131), and the URL address on FTP server 62 which sends a compound mail part is become final and conclusive like Step S114 (Step S132).

[0235]The size of the compression and the conversion file after decision of an address, and a data compression and a conversion process, The size of the file before a data compression and a conversion process and the sum of both sizes are called for (Step S133), The comment about the file which transmits, the URL address fixed at Step S132, The size information of the compression and the conversion file called for at Step S133, the size information of the original file, And the text mail part which comprises information about a data compression and conversion format, etc. is created (Step S134), By measuring the sum of the size after the data compression and conversion called for at Step S133, and the size before a data compression and conversion, and the availability of FTP server 62, it is distinguished whether there is any sufficient availability to receive a compound mail part on FTP server 62 (Step S135).

[0236]When there is availability sufficient by distinction of Step S135, FTP transmission of compression, a conversion file, and the original file is carried out to the field on the FTP server which the URL address fixed at Step S132 shows (Step S136). When transmitting side PC11 serves also as the function of FTP server 62, in Step S136, a compound mail part is copied to the predetermined region in transmitting side PC11 used as FTP server 62. And the text mail part created at Step S134 is transmitted to the mail address of the addressee who is the present processing object by the usual mail protocol (Step S137). After transmission of the text mail part to the addressee who is this transmission object is completed, it progresses to Step S120 and a transmission object is changed by the next addressee.

[0237]By distinction of Step S130, when it is ending with transmitting about a common format compound mail part file, processing of Steps S131-S136 is skipped, it progresses to Step S137, and transmission of a text mail part is performed.

[0238]When there was not sufficient availability for FTP server 62 and it is distinguished in Step S117, Step S127, or Step S135, The warning message which shows that with the transmitting side e-mail software wear 61 is displayed on the display of transmitting side PC11 (Step S138), and this procedure is ended by stopping transmitting processing.

[0239]As explained above, according to this embodiment, the conventional problem mentioned above is solved as follows.

[0240]** Although the text mail part in this embodiment passes along the usual e-mail channels of communication using the standard protocols for E-mails (SMTP, POP3, etc.) about restriction of the mail size which can transmit, it is the usual text format, and since it is small size, don't produce the problem of transmission and reception.

[0241]On the other hand, about a compound mail part, although each of transmission to FTP server 62 from transmitting side PC11 and transmission to receiver PC17 a-c from FTP server 62 used the file transfer protocol, There is no restriction by data size like the standard protocol for E-mails, a kind of data, a communication path, etc. in this protocol as a matter of fact. Therefore, according to this embodiment, the conventional problem of restriction of mail size which was mentioned above is solved.

[0242]** About reception of the compound mail by a receiver, and un-guaranteeing of a display, since the text mail part in this embodiment is the usual text format and is small size, don't produce the problem of reception or display processing.

[0243]On the other hand, unlike a 1st embodiment and a 2nd embodiment, since it is a file, it is not necessary to display a compound mail part on receiver PC17 a-c. The browser has spread widely to various plat forms, and has a FTP receiving function. In addition, since the typical browser has an electronic mail function which has a clickable URL function, in PC connected to the Internet 13 at least, it can receive the E-mail transmitted by the procedure mentioned above.

[0244]** It is determined about the complicatedness of handling of compound mail data, and difficulty whether perform a data compression and a conversion process in consideration of the flexibility etc. of the kind of file which the compound mail part in this embodiment transmits, and when not performing a data compression and a conversion process, the original transmitting file is transmitted. In this case, since an addressee will receive the file of the origin which is a general-purpose form itself, a data handling problem is not produced.

[0245]It is a case where a data compression and a conversion process are performed, and when there are a data compression and conversion format specification, or when the file format which an addressee can treat is known, a data compression, and the compression and the conversion file which were changed are transmitted to the form currently supported by the machine environment of the receiver. Since the addressee can receive the file of the form currently supported in the self environment also in this case, there is no problem of data handling.

[0246]When it is a case where a data compression and a conversion process are performed and there are not a data compression and conversion format specification, or when the file format which an addressee can treat is unknown, and when, According to this embodiment, the both sides of the compression, and conversion format compression and conversion file which are supported in much receiver environment, and the original transmitting file are transmitted to a FTP server. Therefore, since an addressee receives the file which looks at the contents of text mail and is judged to be the most suitable with a file transfer protocol, there is no problem of data handling.

[0247]Since the optimal file format is automatically chosen as the address book especially shown, for example in drawing 8 to the e-mail addressee by whom machine environment is registered beforehand, simplification of selection of the file format for every addressee not only in the problem of handling of the received data by the side of an addressee but the transmitting side can be attained.

[0248]** About the problem at the time of reception of large size mail, since the text data part in this embodiment is usual text format and small size, don't produce the problem at the time of reception.

[0249]About reception of a compound mail part, it is distinction of Step S92 of drawing 9, and an addressee can also determine the stage when an addressee can determine whether receive a compound mail part file, and the reception is performed. Since reception of a compound mail part is performed when an addressee's convenience is good, it can avoid the state [a time zone inconvenient to e-mail reception / a circuit or a personal computer] like conventional technology where it will be occupied by the reception.

[0250]When there are a data compression and conversion format specification at the time of transmitting mail, Since the transfer data size at the time of reception becomes small when the file format which an addressee can treat is known, or when [, such as a case etc. of the form which the compressed file in a FTP server can treat by an addressee's machine environment,] receiving a compressed file, inconvenience at the time of reception can be made small.

[0251]** As mentioned above about pressure of the network traffic by the multiple address of large size mail, in the broadcast mail in this embodiment, a text mail part is transmitted to each reception destination which specified the multiple address, but about a compound mail part, it is transmitted only once to FTP server 62.

[0252]That is, it is only a text mail part with little data volume that the multiple address is carried out, and transmission of the compound mail part of large size is performed only once irrespective of the number of the multiple address points.

[0253]Since access to the compound mail part in FTP server 62 from each addressee is performed when the convenience for every addressee is good, neither concentration of network traffic nor concentration of the data to a specific mail server is produced.

[0254]Since the addressee who judged that reception of a compound mail part was unnecessary, seeing the contents of the text mail part does not perform access to FTP server 62, he can aim at further reduction of the network traffic as the whole.

[0255]In addition, when the file format which an addressee can treat when there are a data compression and conversion format specification is known beforehand, the optimal file format for each addressee is chosen automatically. Thus, when the optimal file format is chosen, or when it is the form which the compressed file in FTP server 62 can treat by an addressee's machine environment, etc., Since the receiving data size from a FTP server to receiver PC17a - 17c becomes small when receiving a compressed file, network traffic can be made still smaller.

[0256]Since it is transmitted only once if it is attached to the same file format again as the send data from transmitting side PC11 to FTP server 62 was shown in drawing 10, the network traffic in broadcast mail transmission is also minimized.

[0257]Thus, according to this embodiment, the conventional problem is solvable. In addition, since duplication of the file of the same file format is lost on FTP server 62 according to this embodiment, the compound mail storage region size used on a FTP server can also be stopped to adoption.

[0258]In transmission of an E-mail, like the case of a 1st and 2nd embodiment mentioned above, while aiming at further reduction of network traffic, Since access to a compound mail part is possible even if it is not the apparatus which received the E-mail if the URL address of the compound mail part is known, the effect that the same compound mail can also be read at office and a house is acquired, for example, without forwarding an E-mail. When the data to receive is a compressed file, reduction of network traffic will become much more effective.

[0259]Next, the effect of a data compression and a conversion process peculiar to this embodiment is described.

[0260]When there are a data compression and conversion format specification at the time of transmitting mail, or when the file format which an addressee can treat is known, Since the file transfer from FTP server 62 to receiver PC17a - 17c is also performed by compression and a conversion file, the file transfer from transmitting side PC11 to FTP server 62 can also lessen network traffic.

[0261]When there are not a data compression and conversion format specification at the time of transmitting mail, or when the file format which an addressee can treat is unknown, and when, The compression and the conversion file currently supported by much machine environment of receiver PC17a - 17c in this embodiment, Transmit the original transmitting file to FTP server 62, and an addressee receives compression and a conversion file, when it is judged that compression and a conversion file can be dealt with by a self-opportunity by checking the contents of the text mail part, When it is judged that it cannot be dealt with, the original data (it is incompressible) can be received.

[0262]In order to transmit the original file, and compression and a conversion file, the size by which a file transfer is carried out as compared with the case of only the original file becomes large, but the file transfer from transmitting side PC11 to FTP server 62. Since size of a compressed file is usually substantially made smaller than the original file, the increase of stock of the transmission file size by this is small.

[0263]On the other hand, since the transmission file size from FTP server 62 to receiver PC17a - 17c is small and it ends when an addressee receives compression and a conversion file, network traffic as the whole can be made small.

[0264]As explained above, transmission and reception of various compound mails are attained without making network traffic increase substantially, while according to this embodiment being able to solve the problem of conventional technology and being able to aim at reduction of network traffic also in a mail transfer.

[0265]According to an addressee's machine environment, optimal data compression and conversion format can be chosen, and also the compound mail storage region size used by FTP server 62 can also be stopped as small as possible.

[0266]In this embodiment, it cannot be overemphasized that various kinds of FTP receiving software with which the software used in order that an addressee may receive and incorporate a file is not restricted to a browser, and practical use is presented can be used.

[0267]Constituted so that the complex data to transmit might be divided into the 1st data division and the 2nd data in the 1st mentioned above - a 3rd embodiment, but. It is also possible to divide compound mail into two or more three or more data parts, and it is also possible to constitute so that each data division may be transmitted via two or more channels of communication and accumulation courses in which it responded to the kind and size of data.

[0268](Other embodiments) The storage which recorded the program code of the software which, in addition, realizes the 1st mentioned above - the function in a 3rd embodiment is supplied to transmitting side PC and receiver PC, Also when the computer (or CPU, MPU) of the transmitting side PC and receiver PC reads and executes the program code stored in the storage, it cannot be overemphasized that the purpose of this invention is attained.

[0269]In this case, the program code itself read from the storage will realize the new function of this invention, and the storage which memorized that program code will constitute this invention.

[0270]As a storage for supplying a program code, a floppy (registered trademark) disk, a hard disk, an optical disc, a magneto-optical disc, CD-ROM, CD-R, magnetic tape, a nonvolatile memory card, ROM, etc. can be used, for example.

[0271]The function of the 1st - a 3rd embodiment mentioned above by executing the program code which the computer read is not only realized, but, It cannot be overemphasized that it is contained also when the function of an embodiment which performed a part or all of processing that OS etc. which are working on a computer are actual, based on directions of the program code, and was mentioned above by the processing is realized.

[0272]After the program code read from the storage was written in the memory with which the function expansion unit connected to the expansion board inserted in the computer or the computer is equipped, It cannot be overemphasized that it is contained also when the function of the 1st - a 3rd embodiment which performed a part or all of processing that CPU etc. with which the expansion board and function expansion unit are equipped are actual, based on directions of the program code, and was mentioned above by the processing is realized.

[0273]

[Effect of the Invention]As explained above, according to the compound mail transmission system of claim 1, or the compound mail method of communication of claim 34. Divide complex data into the 1st data division and the 2nd data division, and said 1st separated data division is transmitted, Transmit to a data accumulation means, accumulate said 2nd separated data division, and said 1st transmitted data division is received and displayed in said receiving set, Based on the access information included in said 1st data division, the access request of said 2nd data division is outputted from said receiving set to said data accumulation means, Since said 2nd data division sent out from said data accumulation means according to said access request was received in said receiving set, Only when receiving the 2nd data division based on access information to the receiving set side, an access request can be carried out, the 2nd data division can be received, therefore the effect that various compound mails can be transmitted and received is acquired irrespective of the machine environment of a receiver.

[0274]Since according to the compound mail transmission system of claim 2, or the compound mail method of communication of claim 37 said 1st data division consists of text data and said 2nd data division contains a non-text data part, Since only the 1st data division of small size is transmitted to a receiving set, and the 2nd data division of large size can be received by outputting an access request only when receiving, While canceling the conventional problems, such as restriction of mail size, and receiving time of large size mail, the effect that reduction in network traffic can be aimed at is acquired.

[0275]According to the compound mail method of communication of the compound mail transmission system of claim 3, claim 38, or claim 39. By distinguishing, whether based on the access information included in the 1st data division, said 2nd data division is read from said data accumulation means, Only when the 2nd data division needed to be read by access information and it is distinguished, while the problem that what is necessary is just to advance an access request therefore, and a circuit and a computer are occupied in an inconvenient time zone like before is canceled, The effect that reduction in network traffic can also be aimed at is acquired.

[0276]Since said data accumulation means is built in said sending set according to the compound mail transmission system of claim 4, or the compound mail method of communication of claim 40, the effect that management of the field which accumulates the 2nd data division can be simplified is acquired.

[0277]Since it was made to perform at least one processing of a data format conversion process, data compression processing, and archive-ized processing to the 2nd data division according to the compound mail transmission system of claim 22, or the compound mail method of communication of claim 58, The effect that network traffic can be made small is acquired.

[0278]According to the compound mail method of communication of the compound mail transmission system of claim 24 or claim 25, claim 60, or claim 61. The file which consists of the 2nd data division to which a data format conversion process or data compression processing was performed, Since the file which consists of the 2nd data division before said data format conversion process or data compression processing is performed was transmitted to said accumulation means, The addressee can receive the file of the most suitable form currently supported by self machine environment, therefore the effect that the fault of being unable to deal with data is solvable is acquired.

[0279]According to the compound mail transmission system of claim 26, or the compound mail method of communication of claim 62, said sending set, Since the information about the machine environment of said receiving set was memorized beforehand, the effect that the 2nd data division can be processed by the sending person side in the optimal form for an addressee, and it can transmit is acquired.

[0280]According to the compound mail transmission system of claim 27, or the compound mail method of communication of claim 63. Since at least one processing of a data format conversion process, data compression processing, and archive-ized processing is performed to said 2nd data division based on the information about machine environment, While being able to make small network traffic at the time of transmission and reception, The addressee can receive the file of the most suitable form currently supported by self machine environment, therefore the effect that the fault of being unable to deal with data is solvable is acquired.

[0281]According to the compound mail transmission system of claim 28, or the compound mail method of communication of claim 64. The inside of 2nd at least one data division that consists of forms corresponding to the kind of receiving set when performing the simultaneous transmissive communication to two or more receiving sets from a sending set, When the 2nd same data division is already transmitted to said data accumulation means, Since it was made not to transmit the 2nd data division that consists of the form concerned and the 2nd data division of the form same at the time of transmission of the 2nd data division from a sending set is only once transmitted, in spite of being a case where simultaneous transmissive communication is performed, The effect that the network traffic in broadcast mail transmission can be held down to the minimum is acquired. Duplication of the 2nd data division of the same form is lost, and the field used for the accumulation on an accumulation means and the effect that it can control to the minimum are acquired.

[0282]According to the compound mail transmission system of claim 29, or the compound mail method of communication of claim 65. Since the 1st data division corresponding to each of two or more receiving sets was transmitted to said two or more receiving sets, respectively when performing the simultaneous transmissive communication to two or more receiving sets from a sending set, Also in simultaneous transmissive communication, the effect that the 2nd data division is receivable by the optimal technique is acquired from the contents of the 1st data division that was suitable for the receiving set concerned, for example with each receiving set.

[0283]According to the compound mail transmission system of claim 30, or the compound mail method of communication of claim 66. Since the address information of the field where 2nd at least one data division corresponding to the kind of said receiving set in said data accumulation means is accumulated in the 1st data division was added when performing the simultaneous transmissive communication to two or more receiving sets from said sending set, The network traffic in the case of performing simultaneous transmissive communication is greatly reducible. In each receiving set, since address information can be known, when it is convenient, reception can be performed, therefore the effect that the fault of occupying a circuit etc. in an inconvenient time zone is cancelable is acquired. The same compound mail can be seen also at places other than the place which received the 1st transmitted data division.

[0284]According to the compound mail transmission system of claim 31, or the compound mail method of communication of claim 67. Since the kind-of-data information on 2nd at least one data division corresponding to the kind of said receiving set in said data accumulation means is added to said 1st data division and it was made to transmit to said two or more receiving sets, respectively when performing the simultaneous transmissive communication to two or more receiving sets from a sending set, Also when performing simultaneous transmissive communication, in each receiving set, the effect that the 2nd data division that consists of a data format suitable for self machine environment is receivable is acquired.

[0285]According to the compound mail transmission system of claim 32, or the compound mail method of communication of claim 68. Since the size information of 2nd at least one data division corresponding to the kind of receiving set in a data accumulation means is added to the 1st data division and it was made to transmit to said two or more receiving sets, respectively, when performing the simultaneous transmissive communication to two or more receiving sets from a sending set, also when performing simultaneous transmissive communication, In each receiving set, the effect that the 2nd data division of size suitable for self machine environment is receivable is acquired.

[0286]The process of dividing complex data into a computer at the 1st data division and the 2nd data division according to the recording medium of claim 70, The process of transmitting said 1st separated data division, and the process of transmitting to a data accumulation means and accumulating said 2nd separated data division, The process of receiving and displaying said 1st transmitted data division in said receiving set, The process of outputting the access request of said 2nd data division from said receiving set to said data accumulation means based on the access information included in said 1st data division, Since the program for performing the process of receiving said 2nd data division sent out from said data accumulation means according to said access request in said receiving set was recorded by said computer in the form which can be read, The effect that an effect equivalent to the compound mail transmission system according to claim 1 mentioned above by performing the program memorized by each device which constitutes the conventional compound mail transmission system at this storage can be acquired is acquired.

[Translation done.]

* NOTICES *

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damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]It is a mimetic diagram showing the flow of the E-mail at the time of transmitting and receiving compound mail on the Internet using the e-mail transport unit concerning a 1st embodiment of this invention.
[Drawing 2]It is a flow chart which shows the compound transmitting mail procedure concerning the embodiment.
[Drawing 3]It is a flow chart which shows the compound mail receiving procedure performed in receiver PC17 shown in drawing 1.
[Drawing 4]It is a mimetic diagram showing the flow of the E-mail at the time of transmitting and receiving compound mail on the Internet using the e-mail transport unit concerning a 2nd embodiment of this invention.
[Drawing 5]It is a flow chart which shows the compound transmitting mail procedure concerning the embodiment.
[Drawing 6]It is a mimetic diagram showing the flow of the E-mail at the time of transmitting and receiving compound mail on the Internet using the e-mail transport unit concerning a 3rd embodiment of this invention.
[Drawing 7]It is a flow chart which shows the compound transmitting mail procedure

concerning the embodiment.
[Drawing 8]In transmitting side PC11, it is a figure showing an example of the registration format of the address book for specifying an addressee simply.
[Drawing 9]It is a flow chart which shows the compound mail receiving procedure performed in receiver PC17.
[Drawing 10]It is a flow chart which shows the simultaneous transmissive communication procedure to two or more addressees of compound mail.
[Drawing 11]It is a flow chart which shows the simultaneous transmissive communication procedure to two or more addressees of compound mail.
[Drawing 12]It is a mimetic diagram showing the flow of the E-mail at the time of transmitting compound mail on the Internet with the conventional transport unit and electronic mail software of an E-mail.
[Description of Notations]
11 Sending set
14 WWW server (the 2nd means of communication, a data accumulation means)
16 Receiver mail server (the 1st means of communication)
17 Receiving set
41 Sending set (a sending set, the 2nd means of communication, a data accumulation means)
62 FTP server (the 2nd means of communication, a data accumulation means)

[Translation done.]

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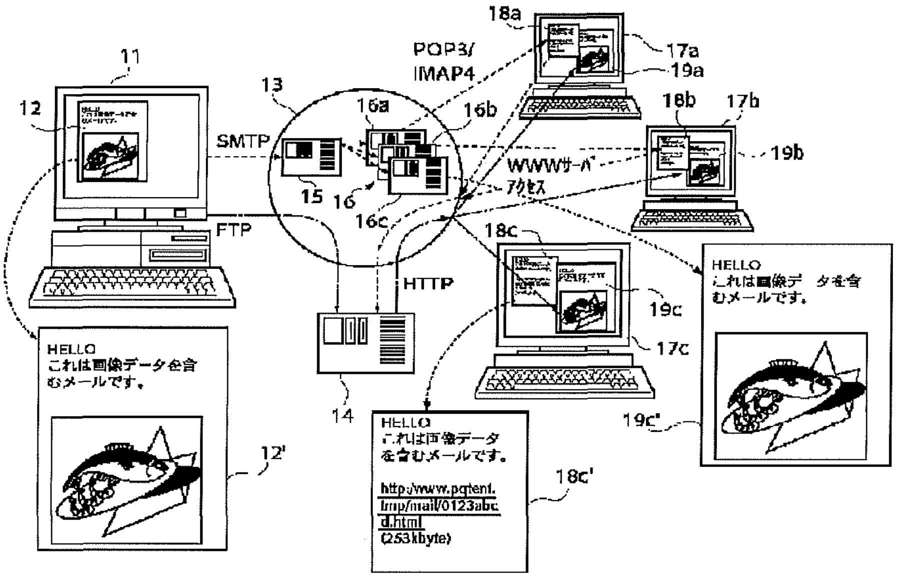
3.In the drawings, any words are not translated.

DRAWINGS

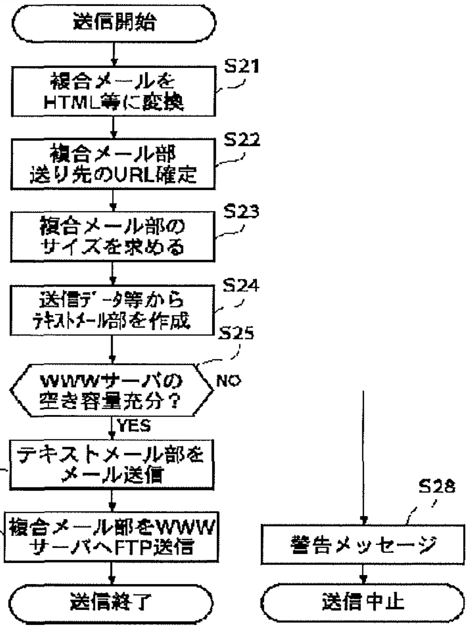
[Drawing 1]


11
12
13
SMTP
FTP
15
16
16a
16b
16c
POP3/
IMAP4
WWWサーバ
アクセス
HTTP
14
18a
17a
19a
18b
17b
19b
18c
19c
17c
19c'
12'
18c'
HELLO
これは画像データを含むメールです。
HELLO
これは画像データを含むメールです。
http://www.pqtent.
lmp/mail/0123abc
d.html
(253kbyte)
HELLO
これは画像デ タを含むメールです。

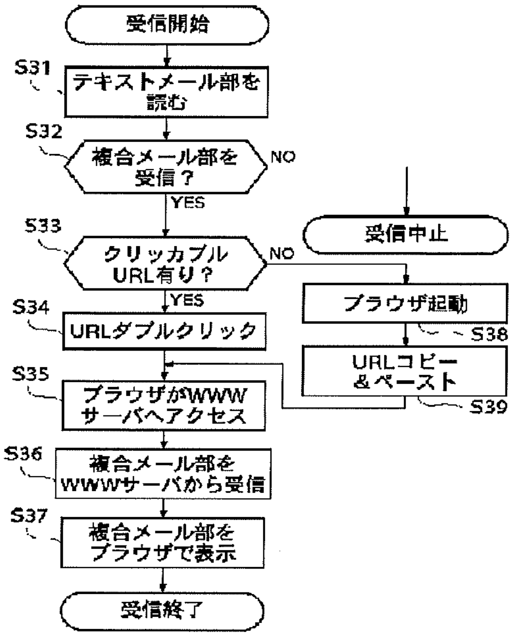
[Drawing 8]

名前	メールアドレス	OS	サポートファイル形式
山田太郎	yamada@foo.co.jp	Windows95	exe,lzh,zip,arc
田中二郎	t_jiro@bar.or.jp	Macintoch	sea,bin,zip
中山花子	hanako@pat.com	UNIX	zip,gz,z
⋮	⋮	⋮	⋮

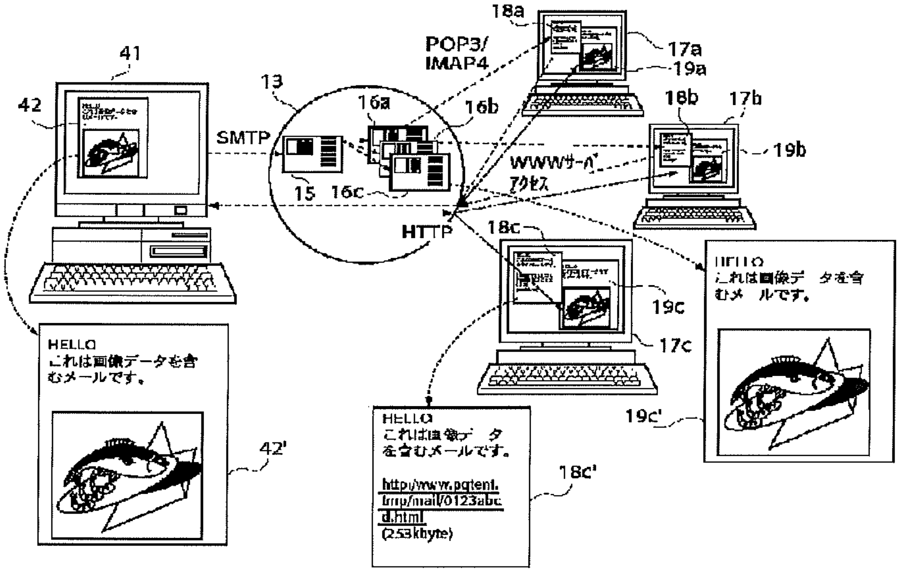
[Drawing 2]


送信開始
S21
複合メールをHTML等に変換
S22
複合メール部送り先のURL確定
S23
複合メール部のサイズを求める
S24
送信データ等からテキストメール部を作成
S25
WWWサーバの空き容量充分？
NO
YES
S26
テキストメール部をメール送信
S27
複合メール部をWWWサーバへFTP送信
送信終了
S28
警告メッセージ
送信中止

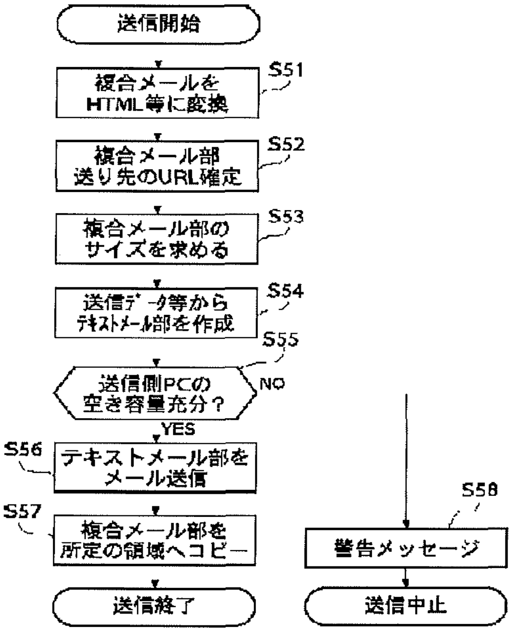
[Drawing 3]


受信開始
S31
テキストメール部を読む
S32
複合メール部を受信？
NO
YES
受信中止
S33
クリッカブルURL有り？
NO
YES
ブラウザ起動
S38
S34
URLダブルクリック
URLコピー＆ペースト
S39
S35
ブラウザがWWWサーバへアクセス
S36
複合メール部をWWWサーバから受信
S37
複合メール部をブラウザで表示
受信終了

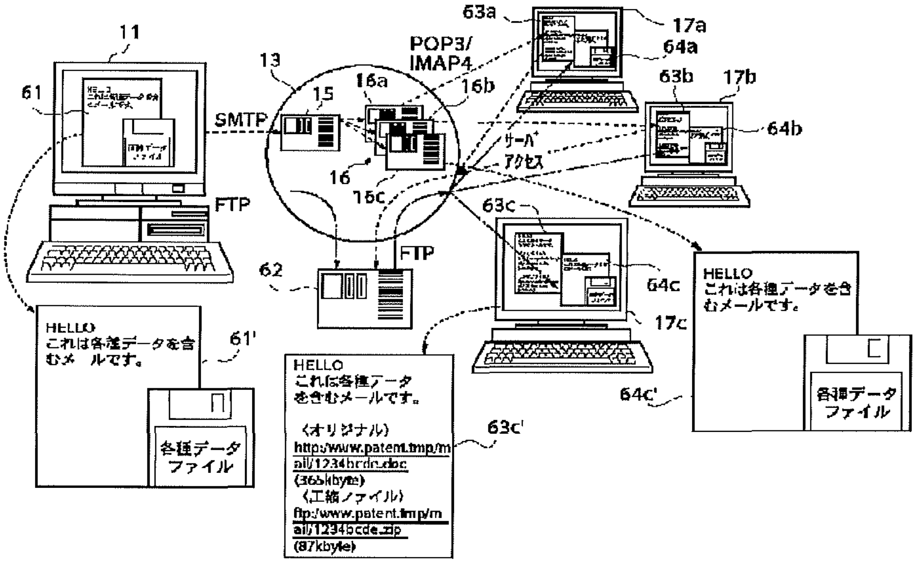
[Drawing 4]


18a
POP3/
IMAP4
17a
19a
41
13
42
16a
16b
18b
17b
19b
SMTP
WWWサーバ
アクセス
15
16c
HTTP
18c
HELLO
これは画像データを含むメールです。
19c
17c
HELLO
これは画像データを含むメールです。
19c'
42'
HELLO
これは画像データを含むメールです。
http://www.pqtent.tmp/mail/0123abcd.html
(253kbyte)
18c'

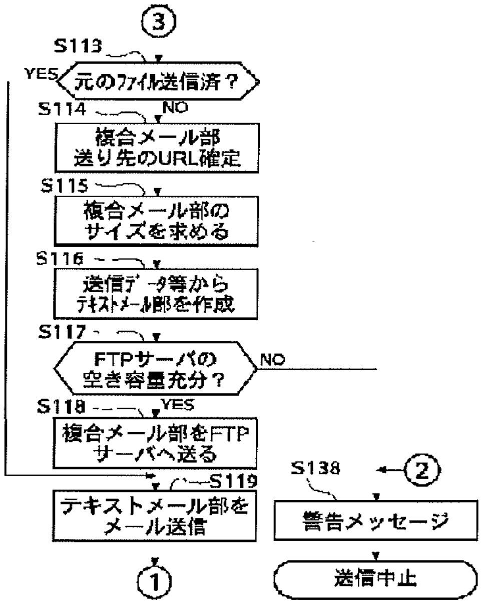
[Drawing 5]


送信開始
複合メールをHTML等に変換
S51
複合メール部送り先のURL確定
S52
複合メール部のサイズを求める
S53
送信データ等からテキストメール部を作成
S54
S55
送信側PCの空き容量充分？
NO
YES
S56
テキストメール部をメール送信
S57
複合メール部を所定の領域へコピー
送信終了
S58
警告メッセージ
送信中止

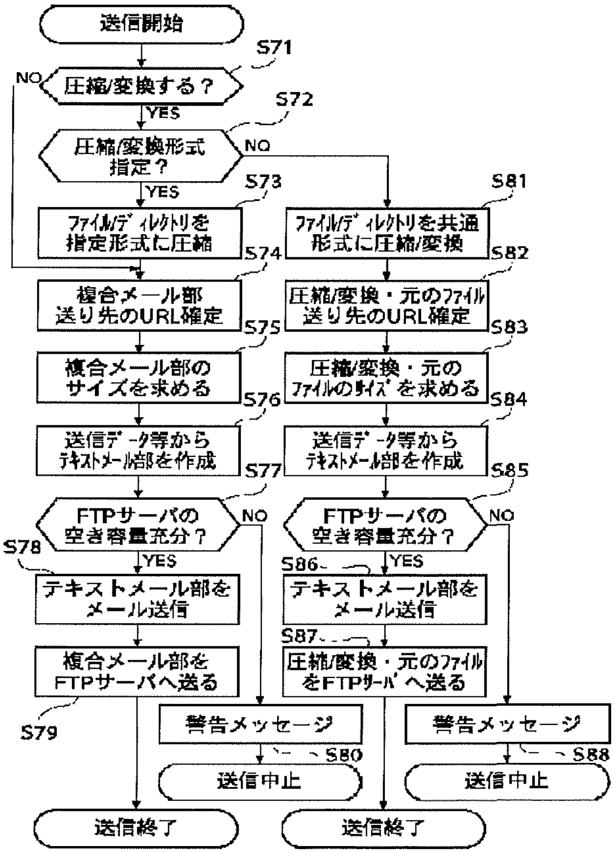
[Drawing 6]


11
61
13
15
16a
16b
16
16c
SMTP
FTP
POP3/
IMAP4
サーバアクセス
63a
17a
64a
63b
17b
64b
63c
64c
17c
62
FTP
HELLO
これは各種データを含むメールです。
各種データファイル
61'
HELLO
これは各種データを含むメールです。
〈オリジナル〉
http://www.patent.tmp/mail/1234bcde.doc
(365kbyte)
〈圧縮ファイル〉
ftp://www.patent.tmp/mail/1234bcde.zip
(87kbyte)
63c'
64c'
HELLO
これは各種データを含むメールです。
各種データファイル

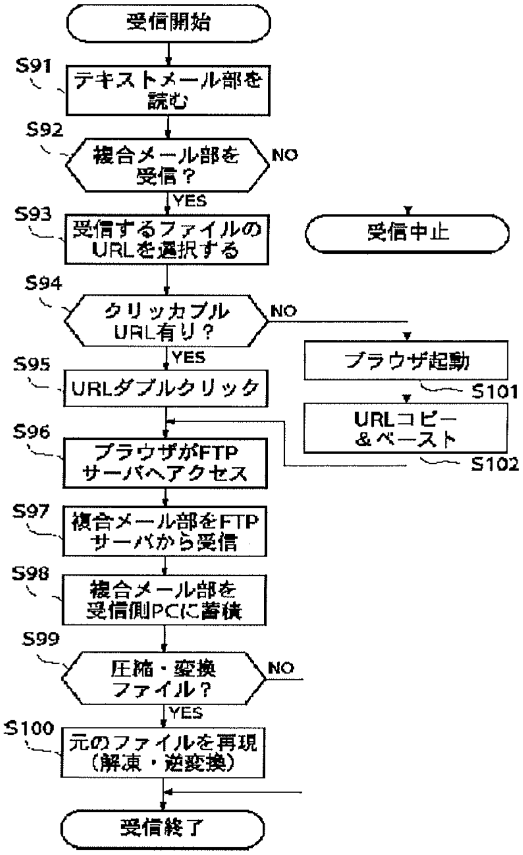
[Drawing 11]


③
S113
元のﾌｧｲﾙ送信済？
YES
NO
S114
複合メール部
送り先のURL確定
S115
複合メール部の
サイズを求める
S116
送信ﾃﾞｰﾀ等から
ﾃｷｽﾄﾒｰﾙ部を作成
S117
FTPサーバの
空き容量充分？
NO
S118
YES
複合メール部をFTP
サーバへ送る
S119
テキストメール部を
メール送信
①
S138
②
警告メッセージ
送信中止

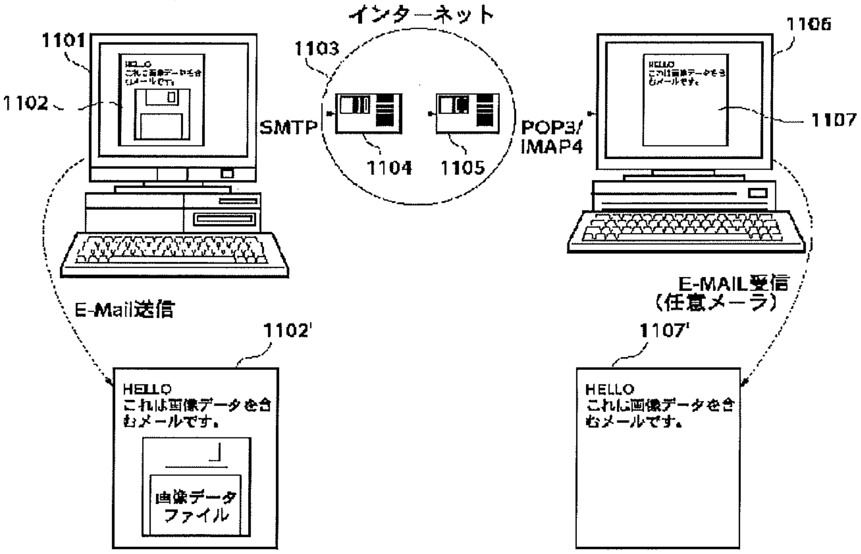
[Drawing 7]


送信開始
S71
NO
圧縮/変換する？
YES
S72
圧縮/変換形式
指定？
NO
YES
S73
ﾌｧｲﾙ/ﾃﾞｨﾚｸﾄﾘを
指定形式に圧縮
S81
ﾌｧｲﾙ/ﾃﾞｨﾚｸﾄﾘを共通
形式に圧縮/変換
S74
複合メール部
送り先のURL確定
S82
圧縮/変換・元のﾌｧｲﾙ
送り先のURL確定
S75
複合メール部の
サイズを求める
S83
圧縮/変換・元の
ﾌｧｲﾙのｻｲｽﾞを求める
S76
送信ﾃﾞｰﾀ等から
ﾃｷｽﾄﾒｰﾙ部を作成
S84
送信ﾃﾞｰﾀ等から
ﾃｷｽﾄﾒｰﾙ部を作成
S77
FTPサーバの
空き容量充分？
NO
S85
FTPサーバの
空き容量充分？
NO
S78
YES
テキストメール部を
メール送信
S86
YES
テキストメール部を
メール送信
複合メール部を
FTPサーバへ送る
S87
圧縮/変換・元のﾌｧｲﾙ
をFTPｻｰﾊﾞへ送る
S79
警告メッセージ
S80
送信中止
警告メッセージ
S88
送信中止
送信終了
送信終了

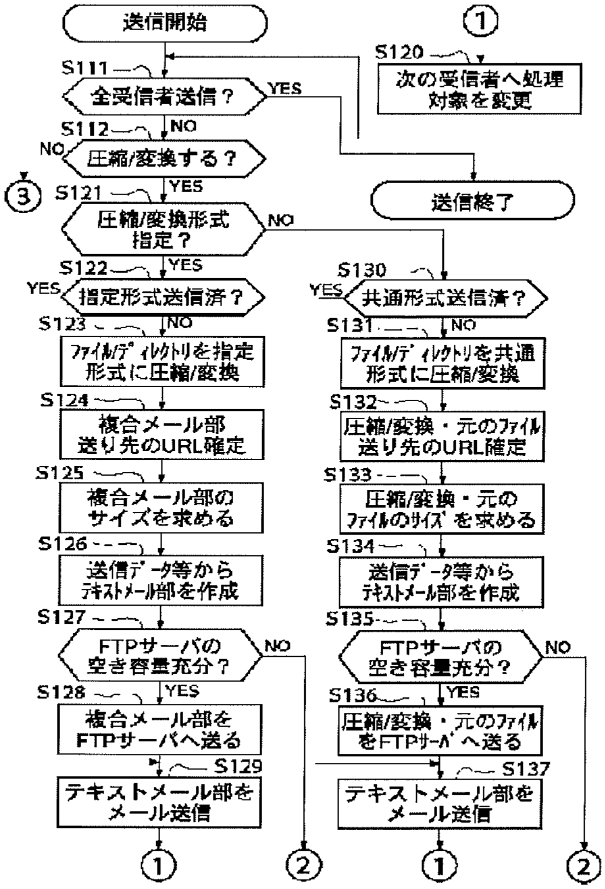
[Drawing 9]


受信開始
S91
テキストメール部を読む
S92
複合メール部を受信？
NO
YES
S93
受信するファイルのURLを選択する
受信中止
S94
クリッカブルURL有り？
NO
YES
S95
URLダブルクリック
ブラウザ起動
S101
URLコピー＆ペースト
S102
S96
ブラウザがFTPサーバへアクセス
S97
複合メール部をFTPサーバから受信
S98
複合メール部を受信側PCに蓄積
S99
圧縮・変換ファイル？
NO
YES
S100
元のファイルを再現（解凍・逆変換）
受信終了

[Drawing 12]


インターネット
1101
1102
1103
SMTP
1104
1105
POP3/IMAP4
1106
1107
E-Mail送信
1102'
HELLO
これは画像データを含むメールです。
画像データファイル
E-MAIL受信（任意メーラ）
1107'
HELLO
これは画像データを含むメールです。

[Drawing 10]


送信開始
S111
全受信者送信？
YES
S112
NO
NO
圧縮/変換する？
③
S121
YES
圧縮/変換形式指定？
NO
S122
YES
YES
指定形式送信済？
S123
NO
ﾌｧｲﾙ/ﾃﾞｨﾚｸﾄﾘを指定形式に圧縮/変換
S124
複合メール部送り先のURL確定
S125
複合メール部のサイズを求める
S126
送信ﾃﾞｰﾀ等からﾃｷｽﾄﾒｰﾙ部を作成
S127
FTPサーバの空き容量充分？
NO
S128
YES
複合メール部をFTPサーバへ送る
S129
テキストメール部をメール送信
①
②
①
S120
次の受信者へ処理対象を変更
送信終了
S130
YES
共通形式送信済？
S131
NO
ﾌｧｲﾙ/ﾃﾞｨﾚｸﾄﾘを共通形式に圧縮/変換
S132
圧縮/変換・元のﾌｧｲﾙ送り先のURL確定
S133
圧縮/変換・元のﾌｧｲﾙのｻｲｽﾞを求める
S134
送信ﾃﾞｰﾀ等からﾃｷｽﾄﾒｰﾙ部を作成
S135
FTPサーバの空き容量充分？
NO
S136
YES
圧縮/変換・元のﾌｧｲﾙをFTPｻｰﾊﾞへ送る
S137
テキストメール部をメール送信
①
②

[Translation done.]